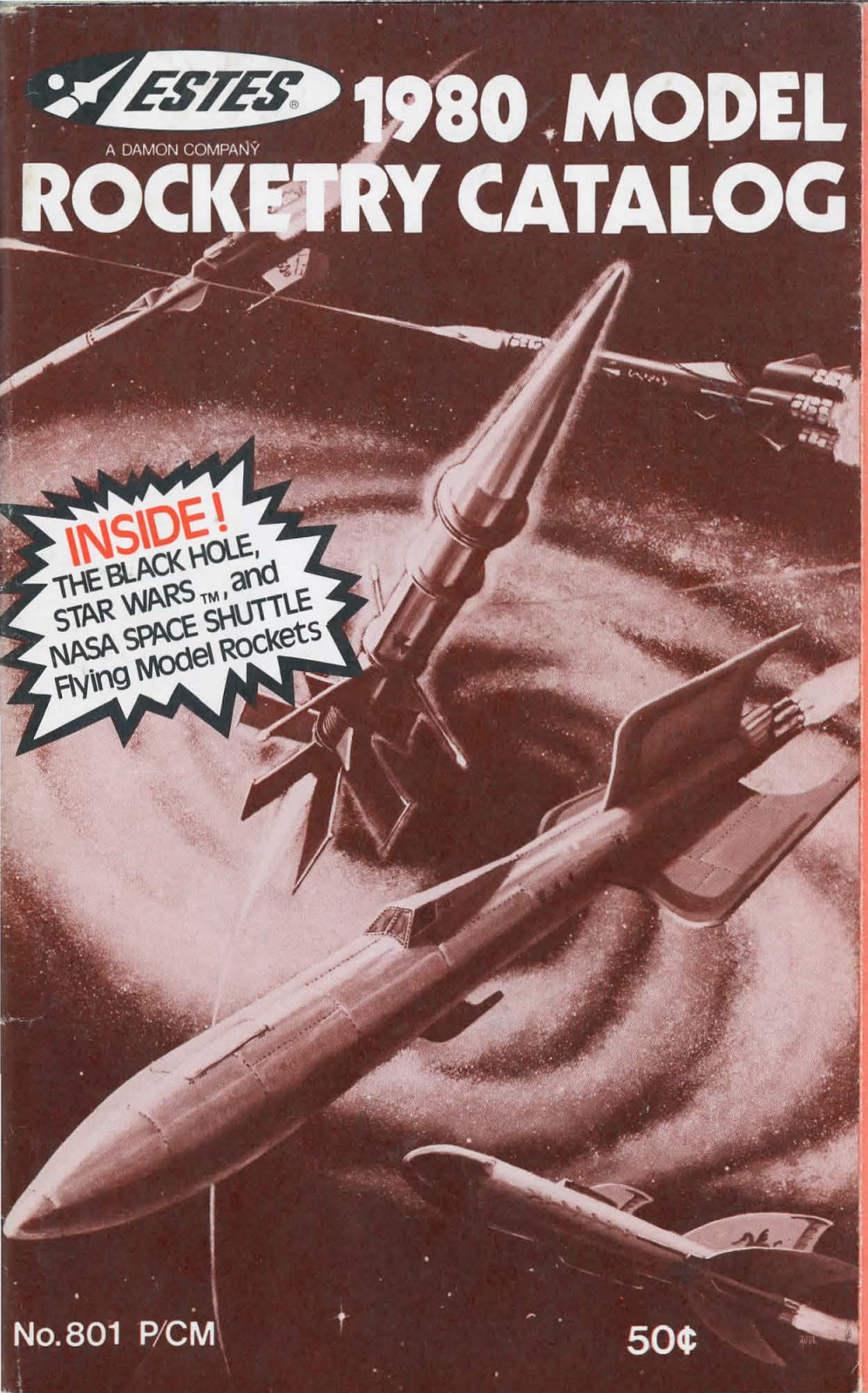
ESTES
A DAMON COMPANY

# 1980 MODEL ROCKETRY CATALOG



**INSIDE!**
THE BLACK HOLE,
STAR WARS™, and
NASA SPACE SHUTTLE
Flying Model Rockets

No. 801 P/CM

50¢



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**SAVE $1.50**
on orders over $15.00
See Bonus Buck on Back

Dear Model Rocketeer:

Estes is getting the 1980's off to a super start with some of the most exciting new model rocketry products you've ever seen. Our 1980 catalog is chock full of past-year favorites – plus – these exciting new items for 1980 - - -

. . Journey to "The Black Hole" with Estes' Space Probe Flying Model Rocket Outfit and Space Probe model rocket. They're based on Walt Disney's spectacular new motion picture, "The Black Hole". See pages 10 and 34.

. . Join NASA in flying the Space Shuttle Orbiter, the space vehicle of the 1980's. Our new NASA Space Shuttle Orbiter features new "Sky Lite"™ skinned foam plastic construction and spectacular flights over 400 feet. Available individually or as a new model rocketry outfit with our popular Big Foot™ Launch Control System. See pages 19 and 64.

. . There are plenty of exciting new rocket kits in all skill levels too. From our Boeing A.L.C.M. Cruise Missile (page 48), and Interplanetary Voyagers like the World Federation Star Probe (page 40), Space Transporter America (page 40) and our new Starfighter Combo kit (page 41), to scale-like models such as the Russian SS-1C Scud B (page 19) and Sea Strike "D" (page 40). From the science-fiction era of the "Galactic Pirates" comes the courageous Patrol Cruiser Excalibur and the dreaded Dragonship 7 (page 35). You'll also discover five "new" Estes high performance model rocket engines (pages 52 and 53) plus our new Fin Alignment Guide (page 54) and Emergency Rocket Repair Kit (page 59).

. . You'll find past-year favorites too like flying "Star Wars" models (pages 29, 30, and 31) and the amazing AstroCam 110 Aerial Camera that takes incredible "color" photos from hundreds of feet in the sky (pages 32 and 33). All this and more is available within the pages of this 1980 Estes Model Rocketry Catalog.

Pages 3 & 4 of this catalog are especially important. They explain how to use the catalog and give a brief description of our skill level coding. Please read it! Information on how to join the more than 25,000 Estes Rocketeers getting the most out of model rocketry in the Estes Aerospace Club is featured on page 63. When you join, you receive a huge assortment of club materials and technical information plus a Viper rocket kit, designed and flown exclusively by EAC members.

Support your 1980 United States Model Rocketry Team. From September 7 thru 12, 1980 at Lakehurst, New Jersey, the United States will sponsor the Fourth World Space Modeling Championships, "The Olympics of Model Rocketry". You can support our team and this event by purchasing and displaying an "official meet patch", featured on page "G" of this catalog wrapper. Dramatic red, white, and blue cloth patch is 3-1/2" diameter. All net proceeds from patch sales go towards U.S. Team and meet funding. Help our U.S. Team "Bring Home The Gold For America"!

America's Space Shuttle mission specialists will make great contributions to scientific and technical knowledge in the 1980's. Through model rocketry you'll be well on your way to learning about . . And eventually making a real contribution to . . The world of science and space flight.

Start the decade off right with Estes Model Rocketry! Best wishes and good flying!

Sincerely,

Vern

Vern Estes

P.S. As a personal favor to me, please review the Model Rocketry Safety Code on page 4 of this catalog. Remember, it's been responsible for guiding rocketeers through more than 165 million safe launchings . . A truly "outstanding" safety record. Thanks!

V. E.

**SAVE $1.50**
or receive a "FREE"
SATELLITE INTERCEPTOR
(worth $4.75) with your
first order over $15.00
See Bonus Buck on Back

**SAVE 50¢**
on EAC MEMBERSHIP
See Bonus Buck on Back

SAVE $3.00 Model Rocketry Outfit™ Only $14.00 See Page G For Special Bonus Coupon!

# BATTLESTAR GALACTICA™*

## COLONIAL VIPER™*

## Flying Model Rocketry Outfit

SKILL LEVEL 2

This BATTLESTAR GALACTICA™* Model Rocketry Outfit requires 6 volt lantern battery, paint and glue not included.

Experience the thrill and excitement of a "Colonial Warrior" and surprise the "Cylon Raiders" with BATTLESTAR GALACTICA™* Flying Model Rockets from ESTES. This BATTLESTAR GALACTICA™* Model Rocketry Outfit features sport-scale Colonial Viper™* and complete launch control system, plus rocket engines, parachute recovery wadding, and Solar rocket igniters for 3 exciting flights.

The Colonial Viper™* is an easy-to-assemble sport-scale model with die-cut fins, quick release engine mount, and realistic Battlestar Galactica™* decals. With "C" type rocket engine your Colonial Viper™* will attain altitudes over 600 feet and then gently return to Earth via 12" recovery parachute.

BATTLESTAR GALACTICA™* Launch Control System features futuristically designed hand-held launch controller with arming lamp, safety key, launch button, and 15 feet of launch cable with micro igniter clips. Plus sleekly designed launch pad with blast deflector plate and 1/8" X 36" two-piece launch rod. Entire system sets up quickly for launch and disassembles easily for compact storage.

Flight Pak includes three N.A.R. safety certified model rocket engines, parachute recovery wadding, and high reliability Solar Igniters.

**Recommended Engines:**
B6-4 or C6-5

**Recommended 6 Volt Lantern Batteries:**
Burgess TW-1 N.E.D.A. Type #918
Eveready #731 Ray-O-Vac #918

Shipping Wt. 1 lb.
Cat. No. 1318
Reg. ~~$17.00~~



# FLYING MODEL ROCKETS

SAVE $1.50 Laser™ Torpedo Only $5.00 See Page G For Special Bonus Coupon!

## Laser Torpedo™*

Skill Level 2

Envisioned by Estes designers to be the most powerful weapon carried aloft and deployed by the Colonial Viper™. Especially effective against the Cylon's thermal mines placed in various forbidden stellar regions. Our version features futuristically shaped nose cone, die-cut fins, quick-release engine mount, and scale-like laser weapon decals. The Laser Torpedo™ will reach altitudes over 800 feet with "C" type rocket engine and returns to earth via 12" recovery 'chute.

**Specifications**
Length 15" (38.1 cm)
Diameter 0.976" (24.8 mm)
Weight 1.06 oz. (30 g)
12" Parachute Recovery
Ship. Wt. 6 oz.

**Recommended Engines**
1/2A6-2, A8-3 (First Flight), A8-5, B4-4, B6-4 and C6-5

Cat. No. 1311
Reg. ~~$6.50~~

SAVE $1.50 COLONIAL VIPER™* Only $6.00 See Page G For Special Bonus Coupon!

## COLONIAL VIPER™*

Skill Level 2

Outstanding sport-scale model of the BATTLESTAR GALACTICA'S™ primary attack craft. Backbone of the Colonial defenses, the Colonial Viper™* is small, fast, and dead on target when encountering the treacherous Cylon Raiders™*. This sensational kit is easy-to-assemble with die-cut fins, plastic nose cone, quick-release engine mount, and realistic decals. Can attain altitudes over 600 feet with "C" type rocket engine. The Colonial Viper™* deploys a 12" recovery parachute for a safe flight and gentle recovery time after time.

**Specifications**
Length 11.75" (29.85 cm)
Diameter 0.976 " (24.81 mm)
Fin Span 4.625" (11.75 cm)
Weight 2.01 oz. (57 g)
12" Parachute Recovery
Ship. Wt. 6 oz.

**Recommended Engines**
B6-4 (First Flight) and C6-5

Cat. No. 1310
Reg. ~~$7.50~~

SAVE $1.00 Flight Pak™ Only $3.25 See Page G For Special Bonus Coupon!

BATTLESTAR GALACTICA™

## FLIGHT PAK

Features three B6-4 and two C6-5 high performance rocket engines plus parachute recovery wadding and 6 Solar rocket igniters.

Cat. No. 1319 .... Reg. ~~$4.25~~

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1980 MODEL
ROCKETRY CATALOG
INSIDE!
THE BLACK HOLE,
STAR WARS ™, and
NASA SPACE SHUTTLE
Flying Model Rockets
No. 801P
50¢

# maxi alpha 3

## "Pro-Demo" Model Rocketry Outfit

$34.95 VALUE Save $6.95

SKILL LEVEL 2

Suggested for Individuals with some model building experience.

**GIANT MAXI-ALPHA III ROCKET** - Nearly 3 feet long with pre-colored easy-to-assemble, press-fit plastic fin-unit and huge plastic nose cone. No painting required! Plus big decal and enormous 24" parachute. (See page23.)

**BIG FOOT**TM Model Rocketry Launch System - Designed for launching the big ones with giant two-foot- print and 3/16" Maxi launch rod. Futuristic launch controller features safety key, arming light, and ignition button. (See page55.)

**HIGH PERFORMANCE FLIGHT PAK** - Three "super powered" D12-3 Rocket Engines, plus Parachute Recovery Wadding, Solar Igniters, and "The Alpha Book of Model Rocketry". Ship. Wt. 4 lbs.

Cat. No. 1411

**Only $28.00**

NEARLY 3 FEET TALL!

Flies Over 500 Feet



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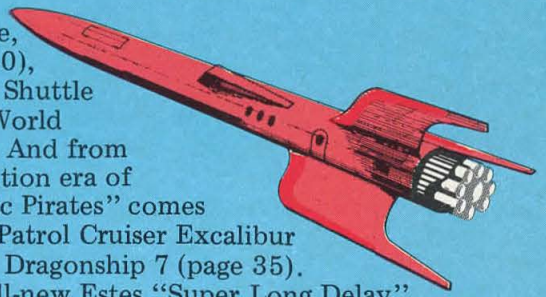
# Welcome To Model Rocketry... 1980

Year after year, for over two decades now, we at Estes Industries have produced the most advanced, up-to-date model rockets of the Space Age. Models from the real world of space travel and from dramatic science fiction productions like Star Wars (pages 29-31).

And now again... for 1980... the line-up of new products is more exciting than ever! From Walt Disney's outer space extravaganza "The Black Hole" (pages 10 & 34), to our new high performance, two-stage Sea Strike "D" (page 40), to a new and larger NASA Space Shuttle Orbiter (page 19), to the exotic World Federation Star Probe (page 40). And from the science-fiction era of "The Galactic Pirates" comes the courageous Patrol Cruiser Excalibur and the dreaded Dragonship 7 (page 35).



Plus there's the all-new Estes "Super Long Delay" D11-9 Engine (page 53) and our new Fin Alignment Guide (page 54) in addition to scale models of the Russian SS-1B SCUD tactical missile (page 19) and the advanced U.S.A.F. air-to-ground Cruise Missile (page 48). Twenty-five new products to add to the already complete line of flying model rockets, outfits, and accessories available from Estes.

The Eighties promises greater-than-ever adventures in space and I'm glad you're with us to enjoy the most exciting hobby on Earth. Beginner or expert, I extend my personal welcome to you all.

Sincerely,

Vern Estes

Vern Estes

## SKILL LEVELS

**1** Very Simple Beginning Rocketeer

**2** Fairly Easy Intermediate Rocketeer

**3** Average Craftsman Rocketeer

**4** Challenging Advanced Rocketeer

**5** Extremely Challenging Expert Rocketeer

*All model rocket kits in this catalog require assembly unless otherwise indicated. Some of these flying model rockets can be put together and be ready to launch in minutes. Others with their sophisticated aerodynamics and wealth of detail are more challenging. The Skill Level numbers given in each kit description recommend the skills and experience necessary for a rocketeer to successfully complete the kit. Generally speaking, it is not wise to jump skill levels. Unless you are an extremely experienced modeler, you should complete a kit of Skill Level 1 before attempting Skill Level 2 ... and you should build a Skill Level 2 rocket before moving on to Skill Level 3... and so on.*

# HERE'S HOW TO USE YOUR ESTES CATALOG.

*All prices in this catalog are subject to change without notice.*

1. Name of the kit.
2. Skill Level number recommends the general skill and experience necessary for a rocketeer to successfully complete the kit. Skill Level 1 kits are suggested for beginners, Skill Level 2 for intermediate rocketeers, and so on to Skill Level 5, Expert Rocketeer.
3. Special features and additional kit information.
4. Specifications including length, diameter, and weight, in both English and Metric Equivalents, plus shipping weight for the kit.
5. Recommended engines for flying the rocket. Engines are listed from least powerful to most powerful. Also, indicates which engine should be used for the first flight.
6. Catalog number for kit which should always be used when ordering.
7. Price of the kit.
8. The background color on each page reflects the appropriate Skill Level color for the kits shown. (See chart below) All kits in this catalog are grouped by Skill Level.

# MODEL ROCKETRY SAFETY CODE

1. Construction — My model rockets will be made of lightweight materials such as paper, wood, plastic and rubber, without any metal as structural parts.
2. Engines — I will use only pre-loaded factory-made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.
3. Recovery — I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.
4. Weight Limits — My model rocket will weigh no more than 453 grams (16 ozs.) at liftoff, and the engine will contain no more than 113 grams (4 ozs.) of propellant.
5. Stability — I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.
6. Launching System — The system I use to launch my model rockets must be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 15 feet from any rocket that is being launched.
7. Launch Safety — I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.
8. Flying Conditions — I will not launch my model rockets in high winds, near buildings, power lines, tall trees, low flying aircraft, or under any conditions which might be dangerous to people or property.
9. Launch Area — My model rockets will always be launched from a cleared area, free of any easy to burn materials, and I will only use non-flammable recovery wadding in my rockets.
10. Jet Deflector — My launcher will have a jet deflector device to prevent the engine exhaust from hitting the ground directly.
11. Launch Rod — To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.
12. Power Lines — I will never attempt to recover my rocket from power lines or other dangerous places.
13. Launch Targets & Angle — I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.
14. Pre-Launch Test — When conducting research activities with unproven designs or methods, I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

*As a member of the Estes Model Rocketry Program, I promise to faithfully follow all rules of safe conduct as established in the above code.*

*Signature* _____



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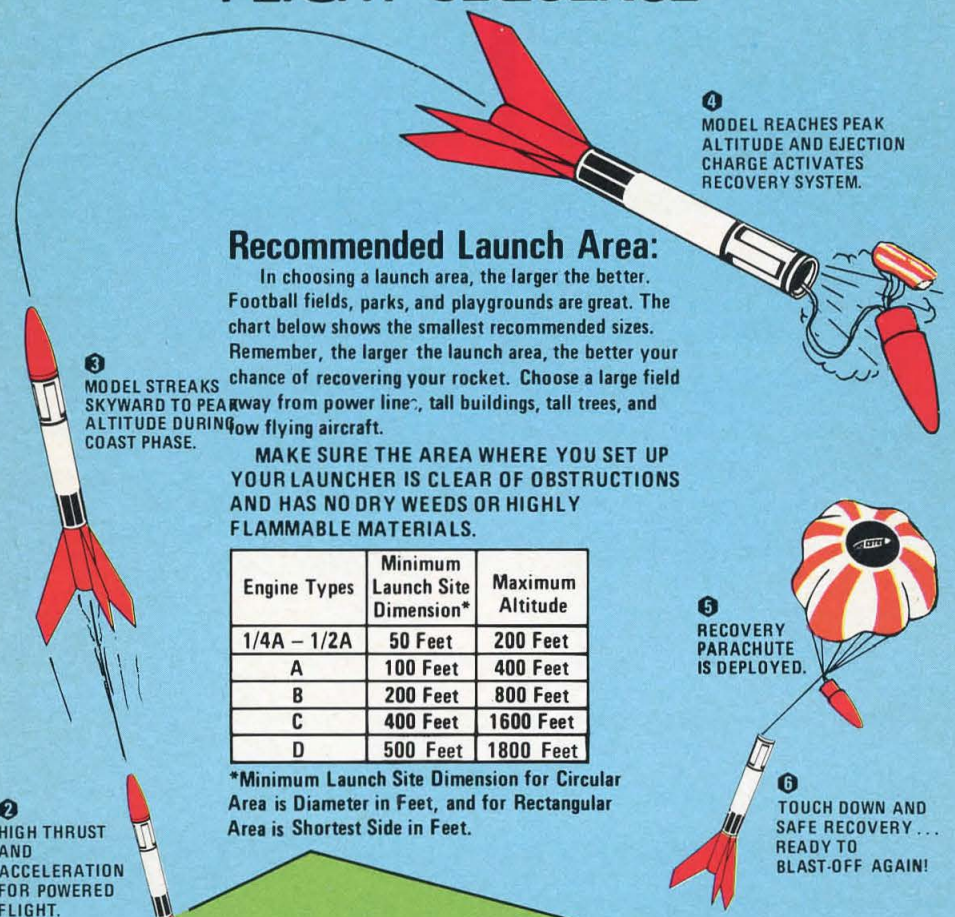
# MODEL ROCKET FLIGHT SEQUENCE


4 MODEL REACHES PEAK ALTITUDE AND EJECTION CHARGE ACTIVATES RECOVERY SYSTEM.
3 MODEL STREAKS SKYWARD TO PEAK ALTITUDE DURING COAST PHASE.
5 RECOVERY PARACHUTE IS DEPLOYED.
2 HIGH THRUST AND ACCELERATION FOR POWERED FLIGHT.
6 TOUCH DOWN AND SAFE RECOVERY . . . READY TO BLAST-OFF AGAIN!
1 ROCKET IGNITION AND LIFT-OFF FROM ELECTRICALLY OPERATED LAUNCH PAD.

## Recommended Launch Area:

In choosing a launch area, the larger the better. Football fields, parks, and playgrounds are great. The chart below shows the smallest recommended sizes. Remember, the larger the launch area, the better your chance of recovering your rocket. Choose a large field away from power lines, tall buildings, tall trees, and low flying aircraft.

**MAKE SURE THE AREA WHERE YOU SET UP YOUR LAUNCHER IS CLEAR OF OBSTRUCTIONS AND HAS NO DRY WEEDS OR HIGHLY FLAMMABLE MATERIALS.**

| Engine Types | Minimum Launch Site Dimension* | Maximum Altitude |
|---|---|---|
| 1/4A – 1/2A | 50 Feet | 200 Feet |
| A | 100 Feet | 400 Feet |
| B | 200 Feet | 800 Feet |
| C | 400 Feet | 1600 Feet |
| D | 500 Feet | 1800 Feet |

*Minimum Launch Site Dimension for Circular Area is Diameter in Feet, and for Rectangular Area is Shortest Side in Feet.

Unless otherwise stated, all the model rocketry kits in this catalog are hobby kits requiring assembly. Launch system, engines, glue, and finishing supplies are not included. Recommended for ages 10 to adult. Adult supervision suggested for those under 12 years of age when flying model rockets.

NAR

THE HOBBY INDUSTRY OF AMERICA PROMOTES ACHIEVEMENT

T·M·A TOY MANUFACTURERS OF AMERICA

CANADIAN ASSOCIATION OF ROCKETRY

*Estes model rocket engines are safety and contest certified by the National Association of Rocketry (N.A.R.) and meet the specifications and requirements set-forth by the National Fire Protection Association.*

"THIS IS WHERE TO BEGIN"

# DER BIG RED MAX

## Deluxe Model Rocketry Outfit

$26.30 VALUE You Save $7.35

**Virtually everything you need to get started in Estes Model Rocketry in a "BIG" way. Includes the Big Red Max Rocket. . .the ultra advanced Big Foot Launch Control System. . . Engines. . . Launching Supplies. . .and the "Alpha Book of Model Rocketry."**

At a moderate price you get practically everything needed for assembly, lift-off, and recovery. (Batteries, glue and finishing supplies are not included.)

Experience the fun of building and the thrill of flying the Big Red Max rocket. This big bird, over two feet long, is easy-to-assemble with die-cut balsa fins, quick-release engine mount, huge plastic nose cone, and "far-out" Red Max decal sheet. Excellent performance with giant 18" orange and white parachute.

Big Foot Launch Control System (page 56) is capable of launching all the rockets in this catalog and is especially recommended for launching Maxi-Brutes and other large rockets. Futuristically designed launch platform features rugged plastic construction and enormous "two foot print" for maximum launch pad stability. Requires four inexpensive "D" cell batteries for power (not included). Launch pad includes blast deflector plate, 1/8" x 36" two-piece launch rod, and adjustable swivel mount to compensate for wind direction.

Launch control unit features quick assembly plus safety key, continuity check light, ignition button and 15 feet of launch cable.

Flight Pak is complete with three high performance, N.A.R. safety-certified engines (two "B" type and one "C" type engines) plus parachute recovery wadding and "Solar" rocket igniters for your first series of exciting flights.

**YOUR BIG FOOT LAUNCH CONTROL SYSTEM WILL LAUNCH EVERY ROCKET IN THIS CATALOG!**

**Only $18.95**

**Recommended Engines:** B4-2
B6-2 (First Flight)
C6-5 B4-4 B6-4

Cat. No. 1403
Ship wt. 3 lbs.

OVER 2 FEET TALL

Easy To Assemble!



# THE ALPHA III STARTER KIT

Skill Level 1 Recommended for Beginners

**FEATURES EASY-TO-ASSEMBLE ALPHA III ROCKET PLUS RUGGED, SPACE-AGE DESIGNED PORTA-PAD LAUNCHER AND HEAVY DUTY SOLAR LAUNCH CONTROLLER!**

If you intend to make a real hobby of Estes Model Rocketry, this ALPHA III Starter Kit gives you great reliability with instant flexibility. The Alpha III kit is a proven performer for flight-after-flight enjoyment. You'll be able to use this launch system with a standard 1/8" launch rod for most rockets, and the 3/16" Maxi-Rod for giant "D" powered flying models.

In addition, the PORTA-PAD tilts to your specifications giving you the option of distance as well as height. You have portability too, with the SOLAR LAUNCH CONTROL SYSTEM as it requires only 4 alkaline, AA batteries for power (not included). Advanced shape allows for perfect hand-held control and is easily assembled in minutes.

**KIT INCLUDES:**
**ALPHA III** Rocket with bright plastic one-piece fin unit and nose cone for quick assembly. Realistic Decal sheet with water soluable decals for easy application.
Brightly colored 12" Recovery Parachute with shroud lines and shock cord.
PORTA-PAD launch platform made of heavy duty plastic with strong girder construction, yet easy to disassemble and extremely portable. Features 36" long x 1/8" diameter standard launch rod and Blast Deflector Plate to protect the Porta-Pad.

THIS KIT-If Sold Separately-Would Cost Approximately $22.05. YOU SAVE $6.10

- **Solar Launch Controller,** extremely lightweight and futuristically designed, requiring only 4 alkaline AA batteries (not included) for ease of transport.
- Parachute Recovery Wadding.
- Solar Rocket Igniters.
- Three NAR Safety Certified Rocket Engines.
- Alpha Book of Model Rocketry, the complete beginner's tech manual and guide.

Ship. wt. 3 lbs.
Cat. No. 1406

**Only $15.95**

*For full description of major items in this kit see: Alpha III (p. 15), Porta-Pad (p. 57) and Solar Launch Controller (p. 57).*

**Recommended Engines:**
1/2A6-2
A8-3 (First Flight)
A8-5 B4-4 B6-4
B8-5 C6-5 C6-7

HERE'S THE STARTER KIT THAT'LL GIVE YOU THE SOPHISTICATED LAUNCH SYSTEM YOU'LL NEED FOR THE "BIG BIRDS" LATER ON!

# Challenger-1
## Flying Model Rocketry Starter Kit

**Assembles in less than 30 Minutes!**

This high performance Challenger-1 rocket is very easy-to-assemble with bright orange plastic nose cone and fin unit. Features quick-finish decor with precolored body tube and realistic roll pattern decals. No painting required! This Challenger-1 rocket can be launched over and over again and can attain altitudes over 1,000 feet! Returns via 12" recovery parachute. You need only replace the rocket engine, igniter, and recovery wadding for each new flight.

Challenger-1 Launch Control System features futuristically designed hand-held launch controller with arming lamp, safety key, launch button, and 15 feet of launch cable with micro igniter clips. Plus sleekly designed launch pad with blast deflector plate and 1/8"X36" two-piece launch rod. Entire system sets up quickly for launch and disassembles easily for compact storage.

Flight Pak includes three N.A.R. safety certified model rocket engines, parachute recovery wadding, and high reliability Solar Igniters for three exciting flights.

Special Bonus - New "Beginner's Tech Manual" filled with model rocketry data to get you started off right. (Ship. wt. 1 lb.)

**Recommended Engines:**
1/2A6-2 A8-3 (First Flight)
A8-5 B4-4 B6-4 B8-5 C6-5
C6-7

**Flies Over 1000 Feet**

**ONLY $9.95**

*(Requires 6 volt lantern battery and glue-not included)*

# X-15 STARTER KIT

**It Really Flies!**

**1/68th Scale X-15 Rocket Ready-to-launch in 15 minutes.**

The perfect beginner's outfit for parent and child. Be ready to launch your X-15 Rocket Plane in less than 15 minutes. Features all plastic snap-together construction for easy, quick assembly.

Ready-to-fly X-15 Rocket Plane comes with 8" recovery parachute, authentic scale decor, and easy-lock engine mount. It looks like the real thing!

Portable futuristic launch control system is ruggedly designed to provide launch-after-launch enjoyment. Advanced launch controller is designed for easy-grip hand held control with safety interlock key, arming light, and launch control button. Realistic launch pad features 24" two-piece launch rod, pre-soldered micro-clips, mini-blast deflector, and sturdy girder construction. The entire system is pre-wired. (Requires four AA size alkaline penlight batteries for operation.)

X-15 Flight Pack includes 3 NAR Safety Certified A3-4T mini engines, parachute recovery wadding, and Estes high reliability Solar Igniters, Special Bonus: The Alpha Book of Model Rocketry is also provided to get you started off right. Ship. Wt. 2 lbs. 8 oz.

Cat. No. 0715

**Only $18.95**

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# THE BLACK HOLE

## Space Probe

Now a spectacular motion picture from Walt Disney Studios.

BUILD AND FLY THE FIRST SPACESHIP TO TRAVEL BEYOND THE UNIVERSE!

NEW!

SKILL LEVEL 2

Suggested for individuals with some model building experience.

©1979 Walt Disney Productions

Space Probe Rocket features die-cut balsa fins, quick release engine mount, plastic nose cone and display nozzle, plus 12" parachute. Flight Pak includes (3) model rocket engines, Solar lighters, parachute recovery wadding, and the Alpha Book. Launch Control System features launch pad with blast deflecto plate, plus easy-to-assemble launch controller with safety key, arming light, and launch rod safety cap.

**Recommended Engines:**
A8-3 (First Flight)
B4-4 B6-4 B8-5
C6-5
Ship. Wt. 1 lb.
Cat. No. 1426

**Only $16.00**

## FLYING MODEL ROCKET OUTFIT

# SKILL LEVEL 1

## POLARIS

Skill Level 1

Sleek sounding rocket design with large payload section. Excellent performance for flights over 1,000 feet. Perfect for your small insect payloads. Returns gently to earth via 12" parachute recovery. Kit includes attractive decals, die-cut balsa fins, quick-release engine mount and plastic nose cone.

**Specifications**
Length 18" (45.7cm)
Diameter 0.976" (24.8mm)
Weight 1.3 oz. (37g)
Ship. wt. 9 oz.

**Recommended Engines**
1/2A6-2
A8-3 (First Flight)
A8-5 B4-4 B6-4 B8-5
B14-5 C6-5 C6-7
Cat. No. 1324

**$4.50**

## GAMMA

Skill Level 1

Super-sport design for great performance. Attain altitudes over 1,000 feet with "C" type engines. Unique two-piece body construction for simplified two-color paint scheme. Contemporary kit name decals for a really sharp-looking bird. Includes plastic nose cone, quick-release engine mount, die-cut balsa fins and 12" recovery parachute.

**Specifications**
Length 20.1" (51.1cm)
Diameter 0.976" (24.8mm)
Weight 1.13 oz. (32g)
Ship. Wt. 10 oz.

**Recommended Engines**
1/2A6-2
A8-3 (First Flight)
A8-5 B4-4 B6-4 B8-5
B14-5 C6-5 C6-7
Cat. No. 1325

**$4.50**

## ESTES KADET

Skill Level 1

Achieve flights over 1,000 feet with this super high flying sport model. Nearly indestructible with pre-colored plastic nose cone and fin unit. Quick and easy-to-assemble. Also features quick-release engine mount, white body tube, and bright red kit name decal--no painting required! Easy-trak recovery with 30" fluorescent streamer.

**Specifications**
Length 15" (38.1cm) Diameter .98" (25mm)
Weight 1.125 oz. (32g) Ship. wt. 5 oz.

**Recommended Engines**
1/2A6-2 A8-3 A8-5 B4-4 (First Flight) B6-4
B8-5 B14-5 C6-5 C6-7 Cat. No. 1328 ..... **$3.50**

*Engines, Launch System, Glue and Paint not included.*

# SKILL LEVEL 1

## Big Bertha

Skill Level 1
Perfect kit for a "big" second rocket. Ideal for demonstration launches. Slow, realistic lift-off for really spectacular flights. 24" from nose to tail, quick-release engine mount, and giant 18" parachute recovery make it a real favorite of rocketeers.

**Specifications**
Length 24" (61cm)
Diameter 1.637" (41.6mm)
Weight 2.2 oz. (62.4 g)
Shipping wt. 11 oz.
**Recommended Engines**
A8-3 B4-2 B4-4 B6-2 (First Flight) B6-4 B8-5 B14-5 C6-5

Cat. No.1223 ..... **$5.75**

## Alpha

Skill Level 1
The ideal kit for your first or second rocket. Swept-fin design makes it a really great performer. Balsa nose cone and fins, quick-release engine mount, and 12" parachute recovery.

**Specifications**
Length 12.25" (31.1cm)
Diameter 0.976" (24.8mm)
Weight 0.8 oz. (23 g)
Shipping wt. 5 oz.
**Recommended Engines**
1/2A6-2 A8-3 (First Flight) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7

Cat. No.1225 ..... **$3.25**

## WIZARD

Skill Level 1
Simple, quick construction with balsa nose cone and die-cut fins. One of the highest performing vehicles in Estes' fleet with its 1600 foot altitude capability and huge 30 inch streamer recovery system that makes it easy to track. Includes great looking kit decals too!

**Specifications**
Length 12" (30.5cm)
Diameter 0.736" (18.7mm)
Weight 0.79 oz. (20 g)
Ship wt. 5 oz.
**Recommended Engines**
1/2A6-2 A8-3 (First Flight) A8-5 B4-4 B6-4 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7

Cat. No. 1292 ..... **$1.95**

## Alpha III

Skill Level 1
Another great first or second kit. Plastic nose cone and fin assembly make for easy, quick assembly. This rocket will deliver outstanding performance flight after flight. Roll pattern decal, quick-release engine mount and 12" parachute are features.

**Specifications**
Length 12.25" (31.1cm)
Diameter 0.976" (24.8mm)
Weight 1.2 oz.(33.9 g)
Shipping wt. 10 oz.
**Recommended Engines**
1/2A6-2 A8-3 (First Flight) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7

Cat. No.1256

**$3.75**

## SCOUT Estes Industries' first model rocket.

Skill Level 1
Originally developed in 1959, the Scout is still a super popular kit among rocketeers. Now our most historic rocket, it is sure to become a real collector's item. Teaches you elementary balance and design principles. Sleek lines and tumble recovery for really exciting flights.
Pat. No. 3,114,317

**Specifications**
Length 7" (17.8cm)
Diameter 0.765" (19.4mm)
Weight 0.3 oz. (9 g)
Ship. wt. 2 oz.
**Recommended Engines**
1/2A6-2 (First Flight) A8-3 B4-4 B6-4 B8-5 B14-5 C6-5

Cat. No. 1201..... **$1.85**

## Sky Hook

Skill Level 1
An excellent kit for your second rocket. Easy-to-build with 12" parachute recovery. Terrific performance flight after flight.

**Specifications**
Length 12" (30.5cm)
Diameter 0.765" (19.4mm)
Weight 0.7 oz. (20 g)
Shipping wt. 5 oz.
**Recommended Engines**
1/2A6-2 (First Flight) A8-3 A8-5 B4-4 B4-6 B6-4 B6-6 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7

Cat. No. 1208..... **$2.95**

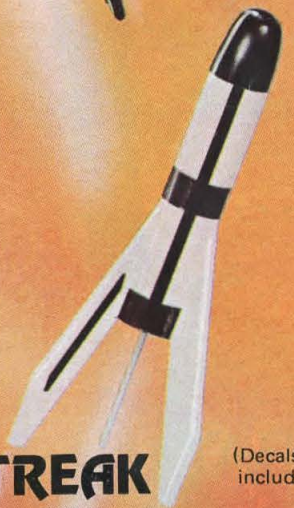
## STREAK

(Decals not included.)

Skill Level 1
Lightweight (1/8 oz. without engine) with wind-cheating design. Great for contests and records. Features simple feather-weight recovery.

**Specifications**
Length 5.6" (14.2cm)
Diameter 0.720" (18.3mm)
Weight 0.1 oz. (3 g)
Shipping wt. 4 oz.
**Recommended Engines**
1/2A6-4 (First Flight) A8-5 B4-6 B6-6 B8-7 B14-7 C6-7

Cat. No. 1204 ..... **$1.75**



*Engines, Launch System, Paint, and Glue not included.*

# SKILL LEVEL 1

## Mark II

Skill Level 1
Ideal for sport or demonstration flying. Designed for midbody ejection/separation system with streamer recovery, it's an excellent challenge for the novice rocketeer. Top-notch performance every time.

**Specifications**
Length 9.1" (23.1cm)
Diameter 0.765" (19.4mm)
Weight 0.7 oz. (20 g)
Shipping wt. 5 oz.

**Recommended Engines**
1/2A6-2 (First Flight)
A8-3 B4-4 B6-4
B8-5 B14-5 C6-5

Cat. No. 1202 . . . **$2.95**

## QUASAR

Skill Level 1
Dramatic, easy-to-build model for beginners. Bright white plastic nose cone and fin assembly. Metallized-preprinted mylar wrap-on decal for the body tube. No painting required! Quick-release engine mount and recovery by 12" plastic parachute.

**Specifications**
Length 14" (35.6cm)
Diameter 0.976" (24.8mm)
Weight 1.5 oz. (42 g)
Shipping wt. 10 oz.

**Recommended Engines**
1/2A6-2 A8-3 (First Flight) B4-2 B4-4 B6-2 B6-4 B8-5 B14-5 C6-5

Cat. No. 0650 . . **$4.75**

## X-RAY

Skill Level 1
Perfect for your first payloader or second kit. Features large see-through payload/cargo section. Perfect for research work of all kinds. The recommended single-stage payload vehicle for small biological projects. 12" parachute recovery.

**Specifications**
Length 16.75" (42.5cm)
Diameter 0.736" (18.7mm)
Payload Sec. Dia. 0.976" (24.8mm)
Weight 0.7 oz. (20 g)
Shipping wt. 5 oz.

**Recommended Engines**
1/2A6-2 A8-3 (First Flight)
B4-4 B6-4 B8-5 B14-5
C6-5 Cat. No. 1218 . . . **$4.75**

## ANTARES

Skill Level 1
Achieve flights over 1200 feet with this high performance sports model. Kit features include fin and roll pattern decals plus 10" parachute recovery. Easy assembly with plastic nose cone, die-cut balsa parts, and quick-release engine mount.

**Specifications**
Length 14.6" (37.1cm)
Diameter 0.976" (24.8mm)
Weight 0.77 oz. (22 g)
Shipping wt. 5 oz.

**Recommended Engines**
1/2A6-2 A8-3 (First Flight) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7

Cat. No. 1276
**$4.00**

## SCAMP

Skill Level 1
Great sports flier with sleek, high performance design. Features 12" parachute recovery with roll pattern and fin decals. Easy-to-assemble with die-cut balsa parts, plastic nose cone and quick-release engine mount.

**Specifications**
Length 13.75" (34.9cm)
Diameter 0.976" (24.8mm)
Weight 0.8 oz. (23 g)
Shipping wt. 5 oz.

**Recommended Engines**
1/2A6-2 (First Flight) A8-3 A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7

Cat. No. 1286
**$4.25**

## ICARUS

Skill Level 1
High altitude payload vehicle with see-through cargo section. Achieve flights of over 1,000 feet with lightweight payload. Simulated sounding rocket appearance with dual roll pattern decor & 12" parachute recovery. Plastic nose cone, die-cut balsa parts, and quick-release engine mount are included for rapid assembly and easy operation.

**Specifications**
Length 20.8" (52.8cm)
Diameter 0.976" (24.8mm)
Weight 1.3 oz. (37 g)
Shipping wt. 5 oz.

**Recommended Engines**
1/2A6-2 A8-3 (First Flight) A8-5 B4-4 B6-4 B8-5 B14-5 C6-5 C6-7

Cat. No. 1277 . . . . . **$4.75**

*Engines, Launch System, Paint and Glue not included.*

# SUPER mini-BRUTES

## SKILL LEVEL 1

### mini Bertha

Skill Level 1
A little sister to the famous Big Bertha listed on page 12. Great performance with colorful 10" parachute recovery. Two-color decal sheet, quick-release engine mount, and balsa and paper construction.
**Specifications**
Length 11.25" (28.58 cm)
Diameter 0.736" (18.69 mm)
Weight 0.484 oz. (13.72 g)
Shipping wt. 6 oz.
**Recommended Engines**
1/2A3-2T (First Flight)
A3-4T A10-3T
Cat. No. 0803
**$2.95**

### MOSQUITO

Skill Level 1
This smallest of all Mini-Brutes combines fantastic performance with feather-weight recovery. Balsa and paper construction with simple spray paint decor makes for quick and easy assembly.
**Specifications**
Length 3.9" (9.9 cm)
Diameter 0.541" (13.74 mm)
Weight 0.1 oz. (2.83 g)
Shipping wt. 4 oz.
**Recommended Engines**
1/4A3-2T (First Flight)
1/4A3-4T 1/2A3-4T
A3-6T A10-3T
Cat. No. 0801
**$ .99**

### Screamer

Skill Level 1
Another super performer featuring spectacular streamer recovery. Screaming off the pad this bird is sure to catch the attention at your launch site.
**Specifications**
Length 7.8" (19.81 cm)
Diameter 0.541" (13.74 mm)
Weight 0.255 oz. (7.23 g)
Shipping wt. 6 oz.
**Recommended Engines**
1/4A3-2T (First Flight) 1/4A3-4T
1/2A3-4T A3-6T
A10-3T
Cat. No. 0802
**$2.75**

### ECLIPSE

Skill Level 1
Reach altitudes over 600 feet with this great Mini-Brute sport flier. High performance design with die-cut balsa fins, quick-release engine mount, kit decals, and 10" parachute recovery.
**Specifications**
Length 12.1" (30.73cm)
Diameter 0.736" (18.69mm)
Weight 0.51 oz. (14.5g)
Ship. wt. 6 oz.
**Recommended Engines**
1/4A3-2T
1/2A3-2T (First Flight)
1/2A3-4T A3-4T
A3-6T A10-3T
Cat. No. 0846
**$3.25**

# LITTLE JOHN

Skill Level 1
Authentic appearance of a semi-scale surface-to-surface military vehicle with U.S. Army decor. Die-cut fins, quick-release engine mount and bright 10" parachute recovery.
**Specifications**
Length 14.0" (35.6cm)
Diameter 0.976" (24.81mm)
Weight 0.875 oz. (21.2 g)
Shipping wt. 6 oz.
**Recommended Engines**
1/2A3-2T (First flight)
A3-4T A10-3T
Cat. No. 0819
**$3.75**

**2 For The Price Of 1 Super Flea & Javelin Only $3.75**

### rogue

Skill Level 1
Scale-like sounding research vehicle with realistic decor. Excellent performance for great sport flying. 10" parachute recovery and die-cut balsa parts.
**Specifications**
Length 11.7" (29.7 cm)
Diameter 0.736" (18.7 mm)
Weight 0.75 oz. (21.26 g)
Shipping wt. 6 oz.
**Recommended Engines**
1/4A3-2T (First Flight)
1/2A3-2T A3-4T A10-3T
Cat. No. 0818 .... **$3.25**

**Can Attain Altitudes Over 1,000 Feet**

### Super Flea

Skill Level 1
The "Flea" has a competition design for ultra-high performance. Reaches incredible altitudes with ogive nose cone and swept fins. Easy-to-build and features break-away drag recovery.
**Specifications**
Length 7.34" (18.64 cm)
Diameter 0.541" (13.74mm)
Weight 0.158 oz. (4.5 g)
**Recommended Engines**
1/4A3-2T (First Flight)
1/2A3-2T 1/2A3-4T
A3-4T A10-3T

### Javelin

Skill Level 1
Super performance, easy-to-build competition design with streamer recovery. Scale-like sounding rocket appearance. Reaches altitudes over 1,000 feet.
**Specifications**
Length 12.4" (31.5 cm) Diameter 0.541" (13.74 mm)
Weight 0.34 oz. (9.6 g)
**Recommended Engines**
1/4A3-2T (First Flight) 1/2A3-2T A3-4T A10-3T

**JAVELIN & SUPER FLEA COMBINATION KIT**
Shipping Wt. 6 oz.
Cat. No. 0815 ..... **$ 3.75**

*Engines, Launch System, Glue, and Paint not included.*

## SKILL LEVEL 2

# BETA

Skill Level 2
Two-stage Mini-Brute for really high flights. Low-drag design with sounding rocket style decor. Booster stage has tumble recovery while top stage returns on 10" parachute.
Pat. No. 3,392,302

**Specifications**
Length 13.76" (34.95cm)
Diameter 0.736" (18.69mm)
Weight 0.75 oz. (21.3 g)
Shipping wt. 6 oz.

**Recommended Engines**
UPPER STAGE
1/4A3-2T (First Flight)
1/2A3-4T A3-6T A10-3T
BOOSTER STAGE
1/2A3-0T (First Flight)
A3-0T A10-0T

Cat. No. 0845
**$3.50**

SUPER mini-BRUTES

## SKILL LEVEL 3

# CONDOR

Skill Level 3
Designed by Estes engineers as a futuristic orbital booster with recoverable shuttle for near-Earth missions, this exotic sports model will be an exciting addition to your model rocketry collection. Shuttle-like parasite glider gives flights up to 90 sec. while realistic booster is recovered via 12" parachute. Economically mini-engine powered, the Condor features great looking decals, die-cut balsa fins, quick-release engine mount, and molded plastic nose cone.

**Specifications**
Booster Length 18.25" (46.4cm)
Booster Diameter 0.976" (24.8mm)
Weight (Booster w/glider) 1.0 oz. (28.3g)
Glider Wing Span 5.0" (12.7cm)
Shipping wt. 12 oz.

**Recommended Engines**
1/2A3-2T (First Flight)
A3-2T A3-4T

Cat. No. 0807 . . . . . **$4.75**

## mini BOMARC

Skill Level 3
Scale model of famous surface-to-air interceptor missile. Authentic Canadian Air Force decor. Features die-cut fins, quick-release engine mount, and 10" parachute recovery.

**Specifications**
Length 11.75" (29.85cm)
Diameter 0.736" (18.69mm)
Weight 1.0 oz. (28.3g)
Wing Span 4.5" (11.43cm)
Shipping wt. 5 oz.

**Recommended Engines**
1/2A3-2T (First Flight)
A3-4T A10-3T

Cat. No. 0805 . . . . . **$4.75**



## SKILL LEVEL 2

"Fly Model Rocketry's Largest Scale Space Shuttle Orbiter!"

# NASA SPACE SHUTTLE ORBITER

NEW!

Features NEW "SkyLite"™ foam skin plastic parts for easy, quick assembly!

Skill Level 2
Dramatic 1/87th semi-scale (H.O. Scale) NASA Space Shuttle with revolutionary new "SkyLite"™ foam skin plastic construction. Easily assembled with molded plastic nose cone, vertical stabilizer fin, rear fuselage, and engine nozzle detail which removes for flight. Delivers spectacular flights over 400' and returns to Earth via huge 18" recovery parachute. Also features realistic kit decals and quick-release engine mount.

**Specifications**
Length 15-1/4" (39 cm)
Wing Span 10" (25 cm)
Weight 3.75 oz. (106 g)
Shipping Wt. 16 oz.

**Recommended Engines**
B4-2 (First Flight) B6-2
C5-3 C6-3

Cat. No. 1337
**$12.00**

Available May 15, 1980

*Engines, Launch System, Glue, and Paint not included.*

NEW!

Available March 15, 1980

## RUSSIAN SS-1C SCUD-B

Skill Level 2
Impressive 1/20.4 scale model of the Russian medium range surface-to-surface missile. Scud-B is the NATO code name designated for this missile which is deployed by all the armies of the Warsaw Pact countries. The actual vehicle can carry either a nuclear or conventional warhead and utilizes storable liquid propellants for a range of up to 200 miles. This realistic kit is easy-to-assemble with die-cut balsa fins, scale plastic nose cone, quick-change engine mount and detailed 3-color missile marking decal sheet. Build it sport-scale or true-scale. A superb flyer and perfect military model for the beginner or advanced rocketeer. Dramatic recovery with big 18" parachute.

**Specifications**
Length 21.7" (55.1 cm)
Diameter 1.637" (41.6 mm)
Weight 2.5 oz. (70.9 g)
Shipping Wt. 11 oz.

**Recommended Engines** B4-2 B4-4 B8-5 B6-4 (First Flight) B14-5 C6-5 C6-7

Cat. No. 1340
**$5.00**

# SKILL LEVEL 2

## Stiletto

Skill Level 2
Exciting scale-like surface-to-air interceptor missile with realistic military decals. Single-engine super-sport performance with two-stage appearance. Kit includes plastic nose cone, and display nozzle, die-cut balsa parts, quick-release engine mount, and 12" recovery parachute.

**Specifications**
Length 22.4" (56.9cm)
Diameter 0.976" (24.8 mm)
Weight 1.27 oz. (36g)
Ship. Wt. 9 oz.

**Recommended Engines**
A8-3 (First Flight)
B4-4 B6-4 B8-5
B14-5 C6-5

Cat. No. 1323

**$4.50**

## TEROS

Skill Level 2
Authentic anti-aircraft missile styling with U.S.A.F. decor. Exciting scramjet design with ramjet nose. Super sports model with 12" parachute, die-cut balsa fins and quick-release engine mount.

**Specifications**
Length 13" (33.0 cm)
Diameter 0.976" (24.8 mm)
Weight 1.2 oz. (33.9 g)
Shipping Wt. 10 oz.

**Recommended Engines**
1/2A6-2 (First Flight)
A8-3 B4-4 B6-4
B8-5 B14-5 C6-5 C6-7

Cat. No. 1285

**$4.25**

## NIKE-X

Skill Level 2
Scale-like single-stage model of U.S. Army's 4th generation, two-stage surface-to-air missile. Nike-style design with U.S. Army decor. Great performance for really impressive flights. Easy-to-assemble. Realistic roll pattern decals, quick-release engine mount die-cut fins, and big 18" parachute.

**Specifications**
Length 23.4" (59.4 cm)
Diameter 1.325" (33.7 mm)
Weight 2.3 oz. (65 g)
Shipping Wt. 9 oz.

**Recommended Engines**
A8-3 (First Flight) B4-4
B6-4 B8-5 B14-5 C6-5

Cat. No. 1270

**$5.75**

## DER RED MAX

Skill Level 2
Far-out super-fun model. Large stable design gives great sport performance. Freaky "Red Max" decal sheet. Molded plastic nose cone and die-cut fins. 18" parachute recovery for perfect launch, flight after flight.

**Specifications**
Length 16.25" (41.3 cm)
Diameter 1.637" (41.6 mm)
Weight 2.375 oz. (67 g)
Shipping Wt. 12 oz.

**Recommended Engines**
B4-2 (First Flight) B4-4
B6-2 B6-4 B8-5 C6-5
B14-5 C6-7

Cat. No. 0651 **$5.75**

*Engines, Launch System, Glue, and Paint not included.*



## Scorpion

Skill Level 2
High flying two-stage sport model with research vehicle styling. Easy-to-build and exciting to fly with all plastic fin units, plastic nose, realistic two-color decals, and 12" recovery parachute. Booster employs tumble recovery while upper stage streaks skyward to altitudes over 1,000 feet.

**Specifications**
Length 26.5" (67.3 cm)
Diameter .976" (24.8 mm)
Weight 1.8 oz. (52 g)
Shipping Wt. 10 oz.

**Recommended Engines**
SINGLE STAGE
A8-3 (First Flight)
A8-5 B4-4 B4-6
B6-4 B6-6 B8-5
B14-5 C6-5 C6-7
TWO STAGE
A8-0/A8-5 (First Flight)
B6-0 < B4-6 / B6-6
B8-0/B8-7
B14-0/B14-7
C6-0/C6-7

Cat. No. 1333

**$5.00**

## BANDIT

Skill Level 2
Features advanced ejection ducting system. It never needs recovery wadding! High performance design and military style appearance makes the Bandit a really impressive bird. Over 25" long with large payload section, die-cut fins, quick-release engine mount, U.S.A.F. decals, and 12" parachute recovery.

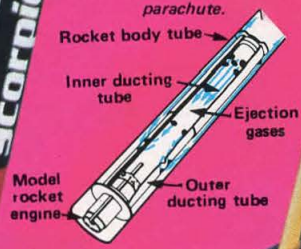
**Specifications**
Length 27.75" (65.4 cm)
Diameter 1.325" (33.6 mm)
Weight 2.6 oz. (73.7 g)
Shipping Wt. 13 oz.

**Recommended Engines**
A8-3 B4-4 B6-4 (First Flight) B8-5 B14-5 C6-5

Cat. No. 1248 **$6.75**

### BANDIT'S ADVANCED EJECTION DUCTING SYSTEM

*Cools ejection gases completely by the time they reach your parachute.*




NEW!

## PATRIOT

Skill Level 2
Big, burly, and impressive sport model over 25" tall. Spectacular "All-American" red, white, and blue decor. Two big decal sheets, 5 colors in all. Fast, easy construction with molded plastic nose cone and die-cut balsa fins. Recovery by 18" parachute.

**Specifications**
Length 26" (66 cm)
Diameter 1.637" (41.6 mm)
Weight 3.3 oz. (94 g)
Shipping Wt. 12 oz.

**Recommended Engines**
B4-2 (First Flight) B4-4 B6-2
B6-4 B8-5 B14-5 C6-5 C6-7

Cat. No. 0652 **$6.75**

# PHOTON DISRUPTOR

Skill Level 2

Equip your star fleet with this sophisticated scale missile from the 23rd century. Designed primarily as a mass conversion weapon to overload the defensive screens of an enemy vessel, the actual Photon Disruptor may also be programmed as an interceptor missile, a proximity space mine, or a space distress signal. Exact size, speed, range, and destruct radius of this vehicle are classified. Photon Disruptor uses impulse power unit and guidance system for launch from planetary surface. Kit features operational status detailing decor and comes complete with 12" parachute. Assembly and operation are made easy with plastic nose cone, die-cut balsa parts, and quick-release engine mount.

**Specifications**
Length 18.25" (46.4cm)
Diameter 0.976" (24.8mm)
Weight 1.4 oz. (40g)
Ship. wt. 6 oz.

**Recommended Engines**
1/2A6-2 A8-3 (First Flight)
A8-5 B4-4 B6-4 B8-5 B14-5 C6-5

Cat. No. 1282 . . . . . **$4.75**

# maxi Alpha

Skill Level 2

Giant scale version of our most popular rocket the Alpha. Great for demonstrations with slow realistic lift-off and dramatic 24" parachute recovery. Flights up to 500 feet with "D" engine. Comes with die-cut balsa fins, molded plastic nose cone, quick-release engine mount and huge decals. Assembles in approximately 30 minutes. Recommended for 3/16" launch rod.

**Specifications**
Length 33.2" (84.33cm)
Diameter 2.6" (66.04mm)
Weight 6.17 oz. (175g)
Ship. wt. 16 oz.

**Recommended Engine**
D12-5

Cat. No. 1291 . . . . **$10.00**

NEARLY 3 FEET TALL!

# Odyssey

Skill Level 2

This unique interstellar spacecraft is conceived to perform a variety of space rescue, exploratory, or intruder intercept missions. Odyssey's modular configuration permits rapid pre-launch preparation to flight status. Impulse power unit jettisons after lift-off from planetary launch site. Its two-man crew and engineering section are then accelerated to near-light velocities for rendezvous and space rescue operations. Our designer's version includes die-cut balsa fins, 18" dia. recovery parachute and two-color rescue vehicle decor. Quick-release engine mount and super-detailed plastic nose section complete the exotic styling of this advanced spacecraft.

**Specifications**
Length 24.1" (61.21cm) Diameter 1.325" (33.7mm)
Weight 2.40 oz. (68g) Ship. wt. 12 oz.

**Recommended Engines**
B4-4 B6-4 (First Flight) B8-5 B14-5 C6-5

Cat. No. 1289. . . . . **$5.75**

*Engines, Launch System, Glue, and Paint not included.*



## SKILL LEVEL 2

## PERFECT FOR DEMONSTRATIONS!

# COLOSSUS

Skill Level 2

Huge addition to our Maxi-Brute fleet. Over 4 feet long with big plastic nose cone and press-fit plastic fin unit. Quick and easy-to-assemble. Really spectacular "D" powered flights with slow realistic lift-off and dramatic 24" parachute recovery. Fin unit, body tube, and nose cone are all pre-colored. No painting required! Rocket shown features recommended paint and decor scheme for model. Includes giant kit decal plus quick-release engine mount. Recommended for 3/16" launch rod.

**Specifications**
Length 51.25" (130.18cm)
Diameter 2.6" (66.04mm)
Weight 9.52 oz. (270g)
Ship. wt. 16 oz.

**Recommended Engine**
D12-3

Cat. No. 1326 . . . . . **$18.00**

OVER 4 FEET TALL!

# maxi alpha 3

Skill Level 2

Very easy-to-assemble giant scale version of one of our most popular kits. Can be ready-to-launch in approximately 30 minutes. Features new press-fit plastic fin unit plus plastic nose cone. "D" engine powered for truly spectacular flights up to 500 feet. Perfect for demonstrations. Really dramatic recovery via huge 24" parachute. Nose cone, fin unit, and body tube are all pre-colored. No painting required! Includes big kit decals and quick-release engine mount too! A 3/16" launch rod is recommended for lift-off.

**Specifications**
Length 33.25" (84.46cm)
Diameter 2.6" (66.04mm)
Weight 7.4 oz. (210g)
Ship. wt. 16 oz.

**Recommended Engine**
D12-3

Cat. No. 1321
**$12.00**

NEARLY 3 FEET TALL!

*The Big Foot Launch System featured on page 56 is especially recommended for launching these kits.*

# SKILL LEVEL 2
# MULTI-STAGERS

Multi-Staging is the next step in expanding your model rocketry skills. Each kit demonstrates how real space ships operate. The first stage is always ignited electrically. Second stage ignition occurs automatically in mid-flight upon burnout of the first stage. Performance and maximum altitude are dramatically increased thru multi- staging.

## AVENGER

Skill Level 2

Long, slender lines give this bird the sounding rocket look. Large 18" chute brings payload section back gently, booster employs tumble recovery.

Pat. No. 3,292,302

**Specifications**

Length 32" (81.3cm)
Diameter 1.325" (33.7mm)
Weight 2.7 oz. (77g)
Shipping wt. 16 oz.

**Recommended Engines**

UPPER STAGE
A8-5 B4-6 B6-6 (First Flight) B8-7 B14-7 C6-7
BOOSTER
A8-0 B6-0 (First Flight)
B8-0 B14-0 C6-0

Cat. No. 1238 . . **$5.75**

## Vigilante

Skill Level 2

Ultra-high performance two-stage model for flights over 1100 feet. Kit features include impressive kit name decal, low drag plastic nose cone and die-cut balsa fins. Sleekly designed upper stage returns via 18" parachute while the booster employs tumble recovery.

**Specifications**

Length 26.5" (67cm)
Diameter 1.325" (33.6mm)
Weight 2.25 oz. (64g)
Shipping wt. 13 oz.

**Recommended Engines**

UPPER STAGE
1/2A6-4 A8-5 (First Flight)
B4-6 B6-6 B8-7 B14-7 C6-7
BOOSTER
1/2A6-0 A8-0 (First Flight)
B6-0 B8-0 B14-0 C6-0

Cat. No. 1278 . . **$5.75**

NEW!

## SKYBOLT

Skill Level 2

Super "D" engine powered high performance sport model. Spectacular flights over 1,000 feet plus dramatic recovery with 90" long fluorescent streamer. Easy-to-assemble and finish with die-cut balsa fins, plastic nose cone, and unique kit decals.

**Specifications**

Length 23" (58.4 cm)
Diameter 1.325" (336 mm)
Weight 1.75 oz (50 g)
Ship. Wt. 11 oz.

**Recommended Engines**

D11-9 D12-7 (First Flight)

Cat. No. 1334. . . . **$4.00**

*Engines, Launch System, Glue, and Paint not included.*



## BLACK BRANT III

Skill Level 2

Sounding scale model of the primary research vehicle produced by Canadian Bristol Aerospace. An excellent choice for your first scale project. Simple construction with plastic nose cone and engine nozzle, die-cut balsa fins and quick-release engine mount. Plus authentic scale decals and 12" parachute. Flys over 1,000 feet with "C" engine.

**Specifications**

Length 20.6" (52.3 cm)
Diameter .976" (24.8 mm)
Weight 1.06 oz. (30 g)
Ship. Wt. 5 oz.

**Recommended Engines**

1/2A6-2 A8-3 (First Flight)
A8-5 B4-4 B6-4 B6-6
B8-5 B14-5 C6-5 C6-7

Cat. No. 1293 . . . . **$4.75**

## DELTA STAR

Skill Level 2

Really sleek, super high performance two-stage payloader capable of lofting a 1 oz. payload over 1,000 feet with "C" type engines. Can be flown either single or multi-stage. Booster stage employs tumble recovery. Easy-to-assemble with die-cut balsa fins, quick-release engine mount, plastic nose cone, and blue and red kit decals. Dramatic recovery via 12" parachute.

**Specifications**

Length 24" (61 cm)
Diameter .98" (24.9 mm)
Weight 1.13 oz. (32 g)
Ship. Wt. 12 oz.

**Recommended Engines**

SINGLE STAGE
A8-3 B4-4 B6-4 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7
TWO-STAGE
A8-0/A8-5 (First Flight)
B6-0 — B4-6 / B6-6
B8-0/B8-7
C6-0/C6-7

Cat. No. 1322

**$5.50**

## CHEROKEE-D

Skill Level 2

Sleek and powerful "D" engine rocket that will practically sail out-of-sight. Big 18" 'chute brings it down safely flight after flight. Die-cut fins, quick-release engine mount and sharp two-color decals. A really beautiful model for your first "D" powered kit.

**Specifications**

Length 21.6" (54.9 cm)
Diameter 1.325" (33.7 mm)
Weight 2.75 oz. (78 g)
Ship. Wt. 11 oz.

**Recommended Engines**

D11-9 D12-5 (First Flight)
D12-7

Cat. No. 1247

**$5.75**

# renegade

Skill Level 2
Spectacular, ultra-high performance "D" bird over 33" long. R & D style design gives it a real test vehicle appearance. Low-drag styling and giant 18" 'chute means an outstanding flight every time. Contemporary decals, quick-release engine mount and die-cut fins.

**Specifications**
Length 33.8" (85.9 cm)
Diameter 1.637" (41.6 mm)
Weight 4.6 oz. (132 g)
Ship. Wt. 12 oz.

**Recommended Engines**
D12-5 (First Flight)
D12-7

Cat. No. 1271

**$6.75**

*Rocket Not Included*

# FIREFLY

PARASITE GLIDER

Skill Level 2
"Hitchhikes" on other larger models for glide-durations of up to 30 seconds beginning at apogee. Perfect kit for your first glider with die-cut balsa parts. Impressive performance.

**Specifications**
Length 12" (30.5 cm)
Wing Span 4.5" (11.4 cm)
Weight 0.16 oz. (4.6 g)
Ship. Wt. 5 oz.

Cat. No. 1280 . . . . . **$1.75**

NEW!

# Maxi Icarus

Skill Level 2
Huge super "D" engine powered payload model with large see-thru cargo section. Delivers spectacular flights over 1,000 feet. Over 6 cubic inches or up to 80 grams of payload capacity. Includes heavy duty die-cut balsa fins, NASA style roll pattern decal, quick-release engine mount, and big 18" parachute for gentle recovery.

**Specifications**
Length 29.75" (75.5 cm) Diameter 1.64" (41.6 mm) Weight 3.2 oz. (90 g) Ship. Wt. 14 oz.

**Recommended Engines**
D12-5

Cat. No. 1331 . . . . . **$8.00**

*Engines, Launch System, Glue, and Paint not included.*





# NOMAD

SURFACE TO SURFACE MISSILE

Skill Level 2
Super long scale-like surface-to-surface missile with ICBM decor. Nearly 4 feet tall, this big bird is easy-to-assemble with plastic nose cone, adapter section and fin unit. Plus three color decal, quick-release engine mount, 12" recovery parachute, and really long payload section.

**Specifications**
Length: 44.25" (112.4 cm)
Diameter .976" (24.8 mm)
Weight: 1.48 oz. (42 g)
Ship. Wt. 10 oz.

**Recommended Engines**
A8-3 (First Flight)
B4-4 B6-4 B8-5
B14-5 C6-5 C6-7

Cat. No. 1344

**$5.00**

NEW!

# BLUE BIRD ZERO

Skill Level 2
Experimental sounding design over 3 feet tall. Easy-to-assemble with die-cut balsa fins, plastic nose cone, and scale-like kit decals. High performance flights and gentle recovery with big 18" recovery 'chute.

**Specifications**
Length: 39.75" (101 cm)
Diameter: 1.325" (33.7 mm)
Weight 2.7 oz. (76 g)
Ship. Wt.: 12 oz.

**Recommended Engines**
B4-2 B4-4 B6-2
B6-4 (First Flight) B8-5
B14-5 C6-5 C6-7

Cat. No. 1335

**$6.00**

NEW!

# SKY RAIDER

Skill Level 2
Flights up to 1500 feet are possible with this big "D" engine powered payloader. Great sports model with large payload section, die-cut balsa fins and quick-release engine mount. Includes great looking kit name decal, high performance plastic nose cone and giant 18" parachute.

**Specifications**
Length 32.75" (83.2 cm)
Diameter 1.325" (33.7 mm)
Weight 2.39 oz. (67.8 g)
Ship. Wt. 11 oz.

**Recommended Engines**
D12-5 D12-7 (First Flight)
C6-5 (with EM-2050 adapter not included. See page 60.)

Cat. No. 1290 . . . . . **$ 5.75**

# SUPER-LONG SPORT-FLIERS

## Mean Machine

Skill Level 2
Tallest rocket in the Estes fleet. Over 6 feet long with giant 24" parachute recovery. "D" engine powered for spectacular flights over 800 feet. Easily assembled with die-cut balsa fins, quick-release engine mount and plastic nose cone. Huge blue "kit name" decal adds the finishing touch for a really great looking bird.

**Specifications**

| | |
|---|---|
| Length | 78.75" (200cm) |
| Diameter | 1.637" (41.6mm) |
| Weight | 5.8 oz. (164 g) |
| Ship wt. | 16 oz. |

**Recommended Engine**
D12-5
Ship wt. 16 oz.
Cat. No. 1295 . . . . . **$9.00**

**Over 6 Feet Tall!**

**Nearly 5 Feet Long!**

## COBRA 1500

Skill Level 2
Attain flights over 700 feet with "C" engine from this extra long sport flier. Giant decal sheet plus die-cut balsa fins, quick-release engine mount and plastic nose cone. Perfect demonstration model with large 18" parachute recovery.

**Specifications**

| | |
|---|---|
| Length | 59" (149.9cm) |
| Diameter | 1.325" (33.6mm) |
| Weight | 3.17 oz. (90 g) |

**Recommended Engines**
B4-2 B4-4 (First Flight) B6-2 B6-4 B8-5 B14-5 C6-5
Ship wt. 12 oz.
Cat. No. 1294 . . . . . **$6.00**

*Engines, Launch System, Glue, and Paint not included.*



# STAR WARS™

## MAXI-BRUTE! X-WING Fighter™

Exact Size Used by STAR WARS™ Special Effects Team

Skill Level 2
Darth Vader and his Imperial Forces will turn and run when confronted by this huge scale replica of science fiction's most popular space-craft. This giant T-65 X-WING FIGHTER is easy to assemble with fantastic detailing and authentic "Death Star" mission decor. By far the most dramatic "STAR WARS" model available for display. "D" engine powered for great performance too! Spectacular flights over 300 feet. Kit components include die-cut balsa parts and highly detailed plastic fuselage, engines and laser pods. Plus quick-release engine mount, scale decals, big 24" parachute recovery and attractive display stand. Small fins have been added for Earth flight and a 3/16" launch rod is recommended for lift-off.

**Over 16" Wingspan And Nearly 22" Long**

**Specifications** Length 21.625" (54.9 cm) Wing Span 16.25" (41.3 cm) Diameter 3.3125" (83 mm) Weight 11 oz. (312 g) Shipping Wt. 2 lbs.
**Recommended Engine** D12-3
Cat. No. 1302 . . . . . **$22.95**

## Proton Torpedo

**Build and fly the missile that destroyed the Imperial Death Star!**

*Requires 6 volt lantern battery and glue (not included).*

Skill Level 1
The high performance Proton Torpedo rocket is very easy-to-assemble with plastic nose cone and fin-unit. Features quick-finish decor. No painting required! Can be launched over and over again and returns via 12" recovery parachute. STAR WARS Launch Control System features futuristically designed hand-held launch controller with arming lamp, safety key, launch button and 15 feet of launch cable. Plus sleekly designed launch pad with blast deflector plate and 1/8" x 36" two-piece launch rod. Flight Pak includes three N.A.R. safety certified model rocket engines, parachute recovery wadding, and Solar Igniters for three exciting flights.

Ship. Wt. 1 lb. 2 oz.
Cat. No. 1420
**Only $15.00**

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# STAR WARS™

## "ROBOT HERO" R2-D2™

Skill Level 2

Own your very own STAR WARS R2-D2 robot! Destined to become the most famous movie robot of all time, our model is 1/5 actual size and actually flies. Artoo "pops his top" in normal model rocket fashion to deploy an 18" dia. recovery parachute for landing on the planet of your choice. Kit features include a molded plastic body dome and body skirt, a precisely detailed 4-color body wrap-on, quick-change engine mount and stabilizer leg-fins. This cantankerous 'droid is certain to be everybodys' favorite at your launch site or on your display shelf.

**Specifications**
Height 9.0" (22.8 cm) Diameter 3.744" (95.09 mm)
Weight 5.1 oz. (145 g) Ship Wt. 16 oz.

**Recommended Engines** B6-2 (First Flight) C5-3 C6-3

Cat. No. 1301 . . . . . **$9.00**

## X-WING Fighter™

Skill Level 2

Scale model of the T-65 X-Wing Fighter piloted by Luke Skywalker during the Rebel Forces attack on the Imperial Death Star. Although simple to construct this model retains all the realism and detail of the actual models used in the film. Great for demonstrations with flights over 300 feet and 12" recovery 'chute. Highly detailed with authentic 3-color decals makes it a spectacular display model too! Kit includes die-cut balsa wings, plastic fuselage, and quick-release engine mount. Small balsa fins have been added for Earth flight.

**Specifications**
Length 10.9" (27.6 cm) Diameter 1.4" (33.6 mm)
Wing Span 8.9" (22.5 cm) Weight 3.5 oz. (99.2 g)
Ship. Wt. 12 oz.

**Recommended Engines**
B4-2 B6-2 C5-3 C6-3 (First Flight)

Cat. No. 1298 . . . . . **$9.00**

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*Engines, Launch System, Glue, and Paint not included.*



## T.I.E. Fighter™

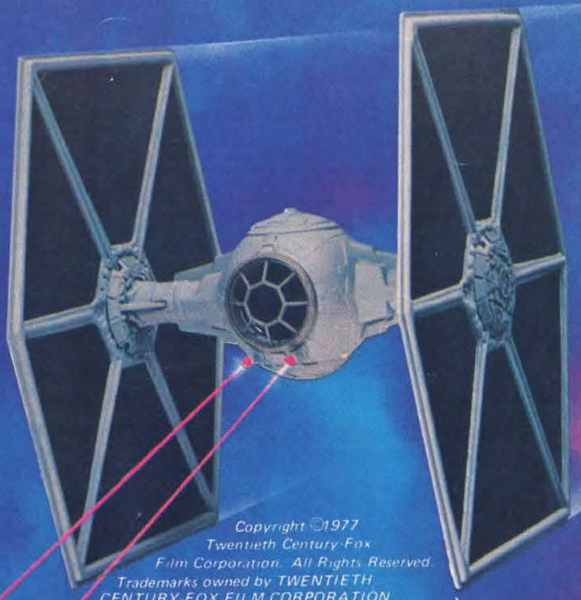
Skill Level 3

Primary attack craft of the Imperial Forces commanded by Lord Darth Vader. Technologically advanced propulsion systems combined with its awesome appearance give the T.I.E. Fighter an overall effect of Gothic Evil. Kit features include highly detailed, pre-colored plastic cockpit and fuselage, quick-release engine mount and big 18" recovery 'chute. Special parachute recovery probe attaches quickly for flight and removes easily for display.

**Specifications**
Display Length: 5.4" (13.7 cm)
Wing Span: 5.0" (12.7 cm)
Flying Length: 21.0" (53.2 cm)
Ship. Wt. 12 oz.

**Recommended Engines**
C5-3 (First Flight) C6-3

Cat. No. 1299 . . . . . **$ 9.00**



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**$27.35 VALUE You Save $8.40**

## X-WING Fighter™ Flying Model Rocketry Outfit

Skill Level 2

Features: Scale model of T-65 X-Wing Fighter (p. 30) piloted by Luke Skywalker during the Rebel Forces attack on the Imperial Death Star. Highly detailed, but easy-to-assemble. Spectacular flights over 300 feet with 12" recovery parachute. Plus, BIG FOOT Launch Control System (p. 55) capable of launching all Estes models including Maxi-Brutes. Futuristically designed launch platform features rugged plastic construction and enormous "two-foot print" for maximum launch pad stability. Includes blast deflector plate, 1/8" x 36" two-piece launch rod, swivel mount that is adaptable to either 1/8" or 3/16" launch rods, and legs which remove easily for compact storage. This launch control unit is newly engineered for simple, quick assembly and features safety key, continuity check light, ignition button and 15 feet of launch cable. Uses 4 inexpensive "D" cell batteries (not included). STAR WARS Flight Pak features two B4-2 and one C6-3 Model Rocket Engines, plus Solar Igniters, Recovery Wadding and the Alpha Book of Model Rocketry. Ship. Wt. 3 lb. *(Batteries, paint and glue are not included.)*

Cat. No. 1422 . . . . . **$18.95**

# ESTES ASTROCAM 110™

# AERIAL CAMERA

## Model Rocketry Outfit

### With Delta II Launch Vehicle

Skill Level 2

**FEATURES:**

*The AstroCam 110 uses the Delta II Launch Vehicle or Challenger II Model Rocket with special stabilizing fin-units for best photo results. Camera is not sold separately. Other launch vehicles are not recommended.)*

*(Film, glue and finishing supplies are not included.)*

*Actual "AstroCam 110" photo of Three Mile Island facility, Allentown, PA. Taken by Scott Pearce, Westchester, PA.*

*Requires four "D" cell batteries for power (not included).*

- *The AstroCam 110, model rocketry's most advanced aerial camera. Shoots sharp, crisp, clear color 110 photos . . one per flight. . . from hundreds of feet above. Easy-to-assemble and simple to operate.
- *Delta II Launch Vehicle features two-color decals, 12" parachute, and special plastic fin-unit for smooth and stable flights, time-after-time. All parts are pre-colored . . . no painting required!
- *Big Foot Launch System with giant two-foot print for maximum launch pad stability, 1/8" launch rod, blast deflector plate, and rugged girder construction. Plus hand-held launch controller with continuity check light, safety key, ignition button, and 15 feet of launch cable.
- *Requires 4 inexpensive "D" size alkaline batteries for power (not included).
- *Flight Pak includes three C6-7, high performance Estes Rocket Engines plus Solar Igniters, Recovery Wadding and the Alpha Book of Model Rocketry.
- *Uses Kodak Kodacolor 110 color print film, ASA 400, or equivalent - not included. Film and developing are available locally.

Cat. No. 1410 . . . **Only $35.00**

Ship. Wt. 3 lbs.

**Camera Specifications:**
Length 6.5" (16.5 cm)
Diameter 1.39" (35.3 mm)
Weight 1.36 oz. (38.5 g) (Without film)
Weight 1.76 oz. (50 g) (With film)

**Recommended Engines:**
B8-5 B8-7 B14-5 B14-7
C6-5 C6-7 (First Flight)

Take Incredible "Color" Photos From Hundreds of Feet In The Sky!

**Film and Developing Available Locally !**

NEW!

## Challenger·II

Skill Level 2

High performance "D" engine powered sport model. Easy-to-assemble and fly in less than one hour. No painting required with black plastic fin-unit, yellow nose cone, and pre-colored white body tube. Features kit decals, quick-release engine mount, and 12" recovery parachute. Recommended high altitude launch vehicle for the AstroCam 110 Aerial Camera. Take fantastic aerial photos from over 1,200 feet. (AstroCam 110 Camera Not Included.)

**Specifications**
Length 24.25" (61.6 cm)
Diameter 1.34" (34 mm)
Weight 3.0 oz. (86 g)
Ship. Wt. 11 oz.

**Recommended Engines**
D12-7 (First Flight) D11-9

Take Fantastic Aerial Photos From Over 1,200 Feet!

Cat. No. 1330 . . . . . **$6.00**

## ESTES ASTROCAM 110™

### Aerial Camera with Delta II Launch Vehicle

Skill Level 2

Experience the thrill and excitement of taking incredible color aerial photographs from hundreds of feet in the sky. As your rocket reaches apogee and begins its descent to Earth, the ejection charge of your rocket engine trips the AstroCam 110's 1/500th sec. shutter and "snap" . . . you have just taken a dramatic aerial photograph from far above. The "new" AstroCam 110 uses high speed Kodak Kodacolor 110 color print film ASA 400 or equivalent (not included). Film and developing are available locally.

Special features include easy, quick-assembly, high quality acrylic lens, molded plastic housing, glass first surface mirror, and high performance aerodynamic design for minimum drag and maximum altitude.

Simple to operate and shoots one, crisp, full color 110 photo per flight. Launch with B8-5 B8-7 B14-5 B14-7 C6-5 or C6-7 engine.

Delta II launch vehicle features specially designed, pre-colored plastic fin-unit for consistently smooth and stable flights. Plus white body tube, quick-release engine mount and great looking, two-color kit decals with dual roll patterns. No painting required! Returns to Earth via 12" dia. parachute.

*(Launch System, engines, glue, and film are not included.)*

**Specifications - Camera with Launch Vehicle**
Length 19.1" (48.5 cm) Diameter 1.34" (35.3 mm) Fin Span 4.75" (12.0 cm)
Weight 3.75 oz, (106.3 g) Ship. Wt. 14 oz.

Cat. No. 1327 . . . **Only $19.00**

ESTES
A BANDAI COMPANY

# CYGNUS PROBE SHIP

Available June 1980

NEW!

Skill Level 3
This is one of science fictions truly unique movie spaceships. Launched from the U.S.S. Cygnus mothership, it is designed primarily to probe the mysteries of the Black Hole. Normally piloted by humanoid robots, it is used as the escape vessel by the crew of the Palomino research craft. The Estes scale version features die-cut parts, quick-release engine mount, and dramatic 18" parachute recovery. Delivers spectacular flights over 400 feet.

**Specifications**
Length 22" (55.88 cm)
Diameter 3.5" (88.9 mm)
Weight 3.8 oz. (107.73 g)
Ship. Wt. 16 oz.

**Recommended Engines**
B4-2 B6-2 (First Flight)
C5-3 C6-3

Cat. No. 1351 . . . . .

**$9.00**

NEW!

# BLACK HOLE Space Probe

Skill Level 2
Features include die-cut balsa fins, quick-release engine mount, plastic nose cone and display nozzle. A 12" recovery parachute deploys automatically for a safe flight and gentle recovery every time. Space Probe Rocket can attain altitudes over 700 feet with "C" type engine.

**Specifications**
Length 25" (63.5 cm)
Diameter .976" (24.8 mm)
Weight 1.59 oz. (45 g)
Ship. Wt. 10 oz.

**Recommended Engines**
A8-3 (First Flight) B4-4 B6-4
B8-5 B14-5 C6-5
Cat. No. 1350 . . . . . .

**$7.00**

**Available Now!**

*Engines, Launch System, Glue, and Paint not included.*

**Now a spectacular motion picture from Walt Disney Studios**

*©1979 Walt Disney Productions*



NEW!

# GALACTIC PIRATES™

## PATROL CRUISER EXCALIBUR "The Good Guy"

Skill Level 3
Sleek and powerful, the Excalibur is the pride of the Intergalactic Patrol. Hidden in the ship's nose, on a retractable carriage is a quad mounted, choke barrel, Hyper-Ballistic Vacuum Gun. Speeds in the Star-Fall category are possible and range is reported to be 63 Billion miles without refueling. Our scale model of this heroic spaceship features die-cut balsa fins, plastic nose cone, quick-release engine mount and large "Galactic Pirates" decal sheet. Delivers really spectacular flights with big 18" parachute recovery.

**Specifications**
Length 20.125" (51.1 cm)
Diameter 1.637" (41.6 mm)
Weight 2.3 oz. (66 g)
Ship. Wt. 12 oz.

**Recommended Engines**
A8-3 B4-4 (First Flight)
B6-4 C5-3 C6-3

Cat. No. 1339 . **$7.00**

## "The Bad Guy" DRAGON SHIP 7

Skill Level 3
Dreaded Dragonship of the Outlaw Galactic Pirate Confederacy. Dragonship 7, based on the asteroid Greb-Sing is an outstanding example of evil technical genius. The ship's Twin Hydron-Stethode Cannon furnish a firepower of the Seventh Magnitude. This alien marauder from deep space is aptly named and universally feared. The Estes version of this villainous craft includes die-cut balsa fins, plastic nose cone, quick-release engine mount, and large "Galactic Pirates" decal sheet. Dramatic recovery with big 18" recovery parachute.

NEW!

**Specifications**
Length 16.75" (42.5 cm) Dia. 1.637" (41.6 mm)
Weight 2.7 oz. (77 g) Ship. Wt. 12 oz.

**Recommended Engines**
A8-3 B4-4 (First Flight) B6-4 B8-5 B14-5 C6-5

Cat. No. 1345 . . . . . **$7.00**

NEW!

## STARBLAZER X-20

Skill Level 3

A main stay in the space arsenal of the U.N. Earth Forces, the Starblazer X-20 is utilized for daily patrol and emergency intercept missions in Earth's outer atmosphere. Armed with laser cannons and known for its almost instantaneous reaction time it has short range capability at speeds in excess of 8,000 M.P.H. Our model features die-cut balsa fins, plastic nose cone, quick-release engine mount and realistic kit decals. Great performance and exciting recoveries with 12" parachute.

**Specifications** Length 19.25" (48.9 cm) Dia. .976" (24.8 mm)
Weight 1.12 oz. (31.7 g) Ship. Wt. 8 oz.

**Recommended Engines** A8-3 (First Flight) A8-5 B4-2 B4-4 B4-6 B6-2 B6-4 B6-6 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7

Cat. No. 1342 . . . . . **$4.00**

# SKILL LEVEL 3

## STARSHIP VEGA

Skill Level 3

Exotic planetary exploration vehicle featuring simulated landing shocks. Futuristically designed with realistic two-color decals, die-cut balsa fins, and quick-release engine mount. A great performer with impressive lift-off and beautiful recovery via 12" 'chute. Science fiction styling gives this bird a real spaceship look.

**Specifications**
Length 19.5" (45.9cm)
Diameter 0.976" (24.8mm)
Weight 1.88 oz (53g)
Ship. wt. 10 oz.

**Recommended Engines**
A8-3 B4-2
B4-4 B6-2
B6-4 (First Flight)
B8-5
B14-5
C6-5 C6-7

Cat. No. 1320 . . . . . **$6.75**

# SOLAR SAILER

Skill Level 3

Simulates one of the newest, most sophisticated space concepts for the 1980's, and like the Space Shuttle Enterprise, Estes engineers have it flying long before NASA does. Developed for low cost, long duration, deep space missions the real vehicle will use sunlight pressure to push it away from Earth at speeds up to 35,000 mph. Our model features printed balsa fins, quick-release engine mount and realistic decals simulating solar panels and girder construction. Truly spectacular recovery with giant 24" solar sail 'chute.

**Specifications**

| | |
|---|---|
| Length | 39" (100cm) |
| Diameter | .976" (24.8mm) |
| Weight | 2.8 oz. (80g) |
| Shipping wt. | 11 oz. |

**Recommended Engines**
B4-2 B4-4 B6-2 B6-4 (First Flight)
B8-5 B8-7 B14-5 C6-5
Cat. No. 1297 . . . . . **$8.00**

GLEAMS LIKE A JEWEL HIGH UP IN SPACE!



# Satellite Interceptor

Skill Level 3

Envisioned by designers to be operational by 1990, this ultra-sophisticated interceptor patrols near-space for possible aggression by hostile satellites. Highly advanced defense systems include both nuclear and lazer armaments. Kit features include printed balsa fins, plastic nose and exhaust cones, quick-release engine mount, and realistic two-color decals. Flights over 600' with 12" parachute recovery.

**Specifications**

| | |
|---|---|
| Length | 22.25" (56.5cm) |
| Diameter | .0976" (24.8mm) |
| Fin Span | 5.5" (14cm) |
| Weight | 1.38 oz. (39g) |
| Shipping wt. | 11 oz. |

**Recommended Engines**
1/2A6-2 A8-3 B4-4 (First Flight)
B6-4 B8-5 B14-5 B14-7 C6-5 C6-7
Cat. No. 1296 . . . . . **$4.75**



# starlab

Skill Level 3

Advanced concept for NASA Space Station designed for either Earth or lunar orbit. Envisioned as a manned scientific laboratory assembled in space and operational by the year 2000, its multi-national crew would be resupplied by Earth or perhaps via a lunar colony shuttlecraft. Our version features unique ring/fin stabilization, simulated solar panels and realistic docking shuttlecraft for display (removes quickly for flight). Plus dramatic 3-color decal, quick-release engine mount and 12" parachute recovery.

**Specifications**

| | |
|---|---|
| Length | 27.75" (70.49cm) |
| Solar Panel Span | 7.4" (18.80cm) |
| Ring Diameter | 4.0" (101.6mm) |
| Weight | 2.19 oz. (62g) |
| Shipping wt. | 11 oz. |

**Recommended Engines**
B4-2 B4-4 B6-2 B6-4 (First Flight)
B8-5 B14-5 C6-5 C6-7
Cat. No. 1288 . . . . . **$ 5.75**




Features Realistic Docking SHUTTLE CRAFT For Display!

*Engines, Launch System, Glue, and Paint not included.*

# SKILL LEVEL 3 INTERPLANETARY VOYAGERS

## U.S.S. ATLANTIS

Skill Level 3

Patrolling the distant outposts of our galaxy are super-fast starships like the USS Atlantis. This multi-mission star cruiser is designed for patrol, escort, transport, and fleet battle operations. Star flight capability is provided by two giant aft propulsion units. The unique, multi-level flight deck allows massive planet-side operations from synchronous or standard planetary orbit. In addition to superior speed and maneuverability, its powerful weaponry enables it to deal single-handedly with most alien vessels. Kit includes colorful decals, die-cut balsa fins, plastic nose cone, and quick-release engine mount. Excellent performance with impressive 12" parachute recovery for flight-after-flight enjoyment.

**Specifications**

| | |
|---|---|
| Length | 23.3" (59.2cm) |
| Diameter | 0.976" (24.8mm) |
| Weight | 1.86 oz. (52.7 g) |
| Shipping wt. | 11 oz. |

**Recommended Engines**

A8-3 B4-4 B6-4 (First Flight) B8-5 B14-5 C6-5 C6-7

Cat. No. 1283 . . . . . **$5.75**

## Andromeda

Skill Level 3

Designed for journeys to distant planets this incredible "starship of the future" will be an outstanding addition to your model rocket collection. Performing interplanetary missions within the galaxy, our engineer's conception of the actual ship features simulated hybrid fission-ion propulsion engines, forward crew module and colorful mission decor. This beauty is over 43" long and represents a unique entry to our own Starship Fleet. Kit features include die-cut parts, highly detailed decals, and quick-release engine mount. Andromeda's flights are of course most spectacular, especially with giant 18" parachute recovery.

**Specifications**

| | |
|---|---|
| Length | 43.3" (110cm) |
| Diameter | 0.736" (18.7mm) |
| Fin Span | 11.8" (30.1cm) |
| Weight | 3.0 oz. (85 g) |
| Ship wt. | 11 oz. |

**Recommended Engines B4-2**

B4-4 B6-2 B6-4 (First Flight) B8-5 B14-5 C6-5

Cat. No. 1273 . . . . . **$8.00**

## Alien INVADER

Skill Level 3

By computer enhancement of declassified portion of sensor readings, Estes engineers have produced a replica of the Alien Invader spacecraft. Available data indicates alien spacecraft capable of limited atmospheric operations. Precise crew complement, internal features, and weaponry not determined from sensor data. Your model includes a plastic forward command hull, engine-engineering section, and outboard atmospheric propulsion units. Kit is complete with die-cut balsa parts, quick-release engine mount, 12" 'chute, and unusual battle insignia decals.

**Specifications**

| | |
|---|---|
| Length | 20.5" (52cm) |
| Diameter | 0.976" (24.8mm) |
| Weight | 1.62 oz. (46 g) |
| Shipping wt. | 8 oz. |

**Recommended Engines**

1/2A6-2 A8-3 (First Flight) B4-4 B6-4 B8-5 B8-7 B14-5 B14-7 C6-5 C6-7

Cat. No. 1281

**$5.25**

## INTERCEPTOR

Skill Level 3

Futuristic version of real interplanetary interceptor. Deep space exotic design makes it the pride of any modeler. Delivers excellent performance for really sensational flights. Dramatic 18" parachute recovery, two big sheets of four-color decals, and quick-release engine mount. Plus all die-cut balsa parts and detailed plastic nose cone, wing pods and tail cone.

**Specifications**

| | |
|---|---|
| Length | 26" (66cm) |
| Wing Span | 7.4" (18.8cm) |
| Diameter | 1.325" (33.6mm) |
| Weight | 3.85 oz. (109 g) |
| Shipping wt. | 12 oz. |

**Recommended Engines**

B4-2 B6-2 B6-4 (First Flight) B8-5 B14-5 C6-5

Cat. No. 1250 . . . . . **$9.00**

**Replacement Plastic Parts Kit**

Includes nose cone, 2 wing pods and tail cone.

Cat. No. 45010 . . . . . **$2.75**

*Engines, Launch System, Glue, and Paint not included*

# SPACE TRANSPORTER AMERICA

Available March 15, 1980

NEW!

Skill Level 3
Scale-like model suggests America's future "single-stage-to-orbit" (SSTO) concept. Gigantic space booster will carry huge payloads into Earth orbit and then return like an airplane. Kit includes plastic injection molded nose cone and display tail unit with scale engine nozzles, die-cut and pre-printed balsa fins and quick-release engine mount. Big, 3 color kit decal has official space shuttle markings. Really impressive flights with 18" recovery parachute.

**Specifications**
Length 21.75" (55.3 cm) Diameter 1.637" (41.6 mm)
Wing Span 7.0" (17.8 cm) Weight 2.5 oz. (70 g)
Ship. Wt. 11 oz.

**Recommended Engines**
B4-2 B6-4 (First Flight) C6-5

Cat. No. 1338 ..... $7.00

## SEA STRIKE "D"

Skill Level 3
Scale-like ship-to-air missile with two-stage super "D" engine power. High performance design for incredible 1,800 foot flights. Huge, four-color decal sheet for realistic military appearance. Features include die-cut balsa fins, plastic nose cone, tumble recovery booster, and 12" parachute recovery for the upper stage.

**Specifications**
Length 31" (78.75 cm) Diameter 1.34" (34 mm)
Weight 3.35 oz. (95 g) Ship. Wt. 15 oz.

**Recommended Engines**
SINGLE STAGE
D11-9 D12-5 (First Flight) D12-7

TWO STAGE
D12-0 / D12-7 / D11-9

Cat. No. 1332 ..... $7.00

# WORLD FEDERATION STAR PROBE

Available March 15, 1980

Skill Level 3
Our engineer's conception of deep space exploratory craft. Powered by atom fueled Nerva thrusters, this futuristic interplanetary voyager utilizes advanced "Loop-Fin" stabilization. Its mission is to peacefully seek-out and discover other life forms. Actual kit includes die-cut balsa fins, plastic nose cone with canopy, quick-release engine mount, and large kit decal. Unique "Loop-Fin" design delivers spectacular flights with 12" recovery parachute.

**Specifications**
Length 31" (78.7 cm) Diameter .976" (24.8 mm) Weight 2.5 oz. (70 g)
Ship. Wt. 10 oz.

**Recommended Engines**
A8-3 B4-2 B4-4 B6-2 B6-4 (First Flight) B8-5 B14-5 C6-5 C6-7

NEW!

Cat. No. 1341 ..... $6.00

NEW!

# ORION STARFIGHTER

Skill Level 3
Perimeter defense starfighter for the Orion cluster. Outfitted with white plasma energy shield and Estegon crystal engines for star-streak acceleration. Includes starfighter decor, die-cut balsa fins, quick-release engine mount, and 12" parachute recovery.

**Specifications**
Length 20.25" (51.44 cm) Diameter 0.976" (24.81 mm)
Weight 1.115 oz. (31.6 g)

**Recommended Engines**
A8-3 B4-2 B4-4 (First Flight) B6-2
B6-4 B8-5 B14-5 C6-5

**SUPER VALUE!**
**STARFIGHTER COMBO KIT**
**Orion StarFighter**
**and**
**Torellian Invader**
**ONLY $8.00**

NEW!

# TORELLIAN INVADER

Skill Level 3
Galactic invader and primary attack fighter from the Torellian Empire. Capable of deploying Zarchronian space mines and launching ion-photonic torpedos. Features include realistic reptilian decor, die-cut balsa fins, quick-release engine mount, and 12" recovery parachute.

**Specifications**
Length 20" (50.8 cm) Diameter 0.976" (24.8 mm)
Weight 1.291 oz. (36.6 g) Shipping Wt. 14 oz.

**Recommended Engines**
A8-3 B4-2 B4-4 (First Flight) B6-2
B6-4 B8-5 B14-5 C6-5 C6-7

**ORION STARFIGHTER & TORELLIAN INVADER COMBINATION KIT**

Shipping Wt. 14 oz. Cat. No. 1343 .... $8.00

*Engines, Launch System, Glue, and Paint not included.*

# SKILL LEVEL 3

Flys To 1,600 Feet!

## SPRINT

Skill Level 3
Real competition design. Highest performance in its class. Up to 1,600 ft. with C6-7 engine. Low drag ogive nose cone and reducer tail section. Contest winning die-cut elliptical fins, decals, and streamer recovery.

**Specifications**
Length 13.8" (35cm)
Diameter 0.976" (24.8mm)
Weight 1.0 oz. (28 g)
Shipping wt. 7 oz.
**Recommended Engines** 1/2A6-2 A8-3 (First Flight) A8-5 B4-6 B6-6 B8-5 B8-7 B14-7 C6-5 C6-7
Cat. No. 1249

**$4.00**

## OMEGA

Skill Level 3

Ultimate in two stage, "D" engine performance for lofting heavier payloads. Features pop-and-go staging, high performance plastic ogive nose cone, large payload section and die-cut fins. Plus two-color fin decals, 18" parachute recovery and tumbling booster.

**Specifications**
With payload section and nose cone.
Length 30.5" (77.5cm)
Diameter 1.637" (41.6mm)
Weight 4.0 oz. (113 g)
Shipping wt. 15 oz.
**Recommended Engines**
SINGLE STAGE FLIGHTS D12-5
TWO STAGE FLIGHTS D12-0 < D11-9 / D12-7
Cat. No. 1200

**$10.00**

Skill Level 3

## BOMARC

Beautifully detailed, 1/24th scale flying model, of the famous U.S.A.F. surface-to-air interceptor missile. Our scale replica features authentic four-color decals, die-cut balsa fins, plastic nose cone and quick-release engine mount. Great performance too with dramatic 18" parachute recovery.

**Specifications**
Length 23" (58.4cm)
Span 9" (22.9cm)
Shipping wt. 12 oz.
Cat. No. 0657 . . . . . **$8.00**
Diameter 1.325" (33.6mm)
Weight 3.5 oz. (99 g)
**Recommended Engines**
B4-2 B4-4 B6-2 (First Flight) B6-4 C5-3 C6-3 C6-5

## NIKE AJAX

Skill Level 3

The first supersonic anti-aircraft missile, the Nike Ajax, was developed to defend large cities and industrial complexes against enemy bomber attack. Actual vehicle has a range of 30 to 50 miles and an effective altitude capability of approximately 60,000 feet at a speed of more than 1500 miles per hour. Real vehicle is boosted by a solid propellant rocket which drops away at a predetermined height as a sustaining liquid propellant motor cuts in. Our 12.4 to 1 semi-scale model comes complete with authentic U.S. Army decor and realistic detailing. Kit includes 18" parachute recovery, die-cut balsa parts, and quick-release engine mount.

**Specifications**
Length 31.25" (79.38cm)
Diameter 1.325" (33.7mm)
Weight 2.6 oz. (74 g)
Shipping wt. 11 oz.
**Recommended Engines**
A8-3 B4-4 B6-4 (First Flight) B8-5 B14-5 C6-5

Cat. No. 1279. . . . **$6.75**

*THE LTV SCOUT CARRIED THE FIRST SATELLITE TO DISCOVER BLACK HOLES IN SPACE!*

**LTV Scout Replacement Plastic Parts Kit.**
**Cat. No. 32473 $3.00**

OVER 3 FEET TALL!

*1/24th Scale*

## LTV Scout

Skill Level 3

The Scout is a four-stage, solid-propellant launch vehicle used for a variety of space missions including orbital, probe and re-entry by the United States and an impressive list of European nations. Since its first mission in 1960, Scout has been the launch vehicle for more than 90 missions, holding the record for consecutive successes among all NASA launch vehicles. We have chosen to scale the Italia version, known for its Uhura satellite which discovered the existance of "black holes" in space. This model is extremely detailed with many plastic parts and realistically decored with 2-color decals. Other features include molded plastic fins and adapter sections, quick-release engine mount and big 18" parachute recovery.

**Specifications**
Length 36.09" (91.67cm)
Diameter 1.637" (41.58mm)
Weight 3.85 oz. (109 g)
Shipping wt. 11 oz.
**Recommended Engines**
C6-5
Cat. No. 1287

**$8.00**

## GOBLIN

Skill Level 3

Powerful and fast, this spooky little kit really gets up and moves. You'll need a good recovery team to retrieve her as she'll reach 1,500 feet and more flight after flight with "D" engines. Dramatic recovery with big, 2" wide bright orange tracking streamer. Includes crazy decals and engine mount.

**Specifications**
Length 14.32" (36.3cm)
Diameter 1.325" (33.6mm)
Weight 2.0 oz. (56.6 g)
Shipping wt. 7 oz.
**Recommended Engines**
D11-9 D12-7 (A8-3, B4-4, B6-4, B8-5, B14-5 C6-5, and C6-7 with adapter EM-2050, not included. See page 60.)
Cat. No. 1255 . . . . . **$5.75**

*Engines, Launch System, Glue, and Paint not included.*

## SKILL LEVEL 3

# MULTI ROC

Skill Level 3

Really exciting multi-purpose sport flyer featuring large payload section, high performance parasite glider, and two-stage booster power. Can be flown in eight different flight configurations. Payload section is perfect for small telemetry or insect cargos. Parasite glider releases from upper stage rocket at apogee and is capable of glide times of more than 30 seconds. Booster section features pop-and-go staging plus tumble recovery. Additional features include die-cut balsa fins, plastic nose cone, quick-release engine mount, and attractive kit decals. Reliable recovery via 12" dia. parachute.

**Specifications**
Length 24.5" (62.2cm)
Diameter .98" (24.9mm)
Weight 1.94 oz. (55g) with glider
Ship. wt. 16 oz.

MULTI ROC

**Recommended Engines**
SINGLE STAGE A8-3 B4-4 B6-4 B8-5 B14-5 B14-7 C6-5
TWO STAGE
A8-0/A8-5 (First Flight)
B6-0 < B4-6 / B6-6 B8-0/B8-7 C6-0/C6-7

Cat. No. 1329

**$8.50**

# German V-2

Skill Level 3

This giant scale model is a replica of the ground-to-ground ballistic missile developed at Peenemunde before and during World War II. This 1/19th scale Maxi-Brute features "D" engine power, detailed plastic nose cone, dual 24" parachute recovery and pre-shaped fins. Nose cone fits BT-101 tube. Model requires 3/16" launch rod for best lift-off performance. This historic reproduction will be the attention-getter at your launch site, and a handsome display model for your desk or bookshelf. Historical background is also included with instructions.

**Specifications**
Length 33.5" (85cm)
Diameter 3.938" (100mm)
Weight 12.5 oz (354.38g)
Shipping wt. 2 lbs.
**Recommended Engine**
D12-3

Cat. No. 1267

**$22.95**

NEARLY 3 FEET TALL!

# gyROC

*"WITH HELICOPTER RECOVERY"*

An amazing and unique "helicopter" recovery system makes the Gyroc a must for your fleet. Lifts-off with main fins in straight-away position. Engine's ejection charge allows rear fin tips to snap sideways causing rotor effect and helicopter recovery. Unusual appearance and strange performance is sure to catch the interest of on-lookers.

**Specifications**
Length 9.8" (24.9cm)
Diameter 0.736" (18.7mm)
Weight 0.6 oz. (17 g)
Shipping wt. 5 oz.
**Recommended Engines**
1/2A6-2 (First Flight) A8-3 B4-4 B6-4 B8-5 B14-5 C6-5

Cat. No. 1224

**$2.95**



# HONEST JOHN

Skill Level 3

1/9th scale model of the famous U.S. Army surface-to-surface, supersonic ballistic missile, one of the mainstays of the Army's atomic weapons capability. This new, highly detailed model uses a single "D" engine for power and comes with pre-shaped, accurately scaled fins and molded plastic nose cone. Spectacular recovery with giant, dual 24" orange and white canopy 'chutes. Great for demonstrations and perfect as an impressive display model. A 3/16" launch rod is recommended for best lift-off results.

**Specifications**
Length 37" (94cm)
Diameter 2.6" (66mm)
Weight 14 oz. (397 g)
Shipping wt. 2 lbs.
**Recommended Engine**
D12-3

Cat. No. 1269 **$22.95**

OVER 3 FEET TALL!



# PERSHING-1A

Skill Level 3

This Maxi-Brute is a true scale model of the U.S. Army's surface-to-surface ballistic missile produced by Martin-Marietta and deployed with NATO units in Europe. Our 1/10 scale model is "D" engine powered with three color decals, preshaped fins, detailed molded plastic nose cone, and dual 24" parachute recovery. A 3/16" launch rod should be used for best lift-off results. The unusual fin configuration of this model makes it one of the most unique scale models ever to be offered. Additional historical background data is also included.

**Specifications**
Length 41" (104.14cm)
Diameter 3.938" (100mm)
Weight 11.5 oz. (326.03 g)
Shipping wt. 2 lbs.
**Recommended Engine**
D12-3

Cat. No. 1268 **$22.95**

OVER 3 FEET TALL!

*Engines, Launch System, Glue, and Paint not included.*

# SKILL LEVEL 3

## apogee II

Skill Level 3

Ultimate in 2-stage performance and reliability. See-through payload section lets you observe specimens without removing them from the rocket. Features 12" parachute and tumbling re-entry booster. Includes Tech Report on Multi-Staging. Pat. No. 3,292,302. (Decals not included.)

**Specifications**

Length 14.7" (37.5cm)
Diameter 0.736" (18.7mm)
Weight 0.6 oz. (17 g)
Shipping wt. 6 oz.

**Recommended Engines**

UPPER STAGE
1/2A6-4 (First Flight) A8-5 B4-6 B6-6 B8-7 B14-7 C6-7
BOOSTER
1/2A6-0 (First Flight A8-0 B6-0 B8-0 B14-0 C6-0

Cat. No. 1205 . . . . **$4.75**

## Farside

Skill Level 3

Sophisticated 3-stage ultra-high altitude probe. Flies to well over 1,700 feet. Top stage cargo compartment makes it an excellent payload vehicle. Booster stages tumble back to earth while upper stage returns via 12" bright orange and white 'chute. Includes Tech Report on staging. Pat. No. 3,292,302

**Specifications**

Length 21.5" (54.6cm)
Diameter 0.976" (24.8mm)
Weight 2.0 oz. (57 g)
Shipping wt. 6 oz.

**Recommended Engines**

FIRST STAGE
1/2A6-0 A8-0 B6-0 B8-0 B14-0 (First Flight) C6-0
SECOND STAGE
1/2A6-0 (First Flight) A8-0 B6-0 B8-0 B14-0 C6-0
TOP STAGE
1/2A6-4 (First Flight) A8-5 B4-6 B6-6 B8-7 B14-7 C6-7

Cat. No. 1212 **$6.50**

## SCISSOR-WING TRANSPORT

Skill Level 3

This exciting bird introduces the revolutionary new Scissor-Wing concept. Features super SST styling and high flight reliability. Capable of glide times of more than 60 seconds. Internal ejection power pod features vertical stabilizer fins. Comes ready-to-assemble with die-cut parts and two-color decals.

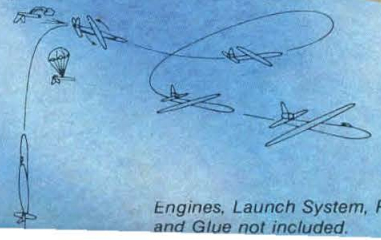
**Specifications**

| | |
|---|---|
| Length | 22.75" (57.7cm) |
| Body Dia. | 0.976" (2.48cm) |
| Wing Span | 16" (40.6cm) |
| Weight w/pod | 2.5 oz. (71 g) |
| Weight w/o pod | 1.8 oz. (51 g) |
| Shipping wt. | 16 oz. |

**Recommended Engines**

B4-2 (First Flight) B6-2 C5-3 C6-3

**$8.00**



*Engines, Launch System, Paint and Glue not included.*



# SKILL LEVEL 4

## MARS SNOOPER II

Skill Level 4

Looks like a real space ship. Futuristic decor, advanced styling, and simulated touchdown pads gives it a real science-fiction appearance. Eye-catching flights with big 18" parachute recovery. Includes die-cut parts, kit decals, and quick-release engine mount.

**Specifications**

Length 22.3" (56.5cm)
Diameter 0.976" (24.8mm)
Weight 2.3 oz. (66 g)
Shipping wt. 8 oz.

**Recommended Engines**

A8-3 (First Flight) B4-2 B4-4 B6-2 B6-4 B8-5 B14-5 C6-5

Cat. No. 1220 . . . . . **$6.75**

**So Realistic, That From A Distance, You'd Swear It Was The Real Thing!!**

**SKILL LEVEL 4**

Model Rocketry's First Scale

## space shuttle

Dramatic 1/162nd scale reproduction of America's newest space vehicle. Designed as a reuseable near space transportation system with satellite deployment and retrieval capability. This semi-scale orbiter employs glide recovery just like the real thing while boosters and external tank return via 18" parachute recovery. Our model features special stabilizer fins for atmospheric flight which remove easily for display. Kit components include injection molded, vacuformed plastic and die-cut parts plus quick-release engine mount.

**Specifications**

Shuttle Length 13.6" (34.5 cm)
Diameter 2.04" (51.8 mm)
Orbiter Length 9.0" (22.9 cm)
Orbiter Wingspan 7.1" ((18.9 cm)
Weight 4.37 oz. (124 g)
Shipping Wt. 16 oz.

**Recommended Engines**

C5-3 C6-3

(Engines, launch system, glue, and finishing supplies are not included in this kit.)

Cat. No. 1284 . . . . . **Only $12.00**

**ASTONISHINGLY REALISTIC RECOVERY SYSTEM! Space Shuttle and Booster Rockets separate in space! Boosters return to earth via giant 18" recovery 'chute, while orbiter glides home!**

# SKILL LEVEL 4

## *Orbital Transport*

Skill Level 4
Only a gleam in the eye of NASA, but it's flying for Estes rocketeers right now! Astonishingly realistic recovery system where engine booster system returns to Earth via huge 18" multi-colored parachute, and interplanetary vehicle glides home. Long and sleek, developed for both orbital and near-space missions, rocket with transport vehicle piggy-backed go straight up, then separate at apogee for spectacular dual recovery. Includes realistic 3-color decals.

**TRANSPORT SHIP**

| | |
|---|---|
| Length | 23" (58.4cm) |
| Diameter | 0.976" (24.8mm) |
| Wing Span | 7.9" (20cm) |
| Weight | 2 oz. (57 g) |

**RE-ENTRY VEHICLE**

| | |
|---|---|
| Length | 8.6" (21.8cm) |
| Diameter | 0.736" (18.7mm) |
| Wing Span | 5" (12.7cm) |
| Weight | 0.5 oz. (14 g) |
| Shipping wt. | 16 oz. |

**Recommended Engines**
B4-2 B4-4 B6-2 B6-4 (First Flight)
B8-5 B14-5 C6-5

Cat. No. 1242. . **$7.00**

*Engines, Launch System, Glue, and Paint not included.*

NEW!

## BOEING A.L.C.M. CRUISE MISSILE

Skill Level 4
The Boeing A.L.C.M. Cruise Missile is America's newest weapon system. Designed to be launched from a large aircraft like the Lockhead C-5A Galaxy or the B-52 Bomber, the Cruise Missile can deliver a nuclear warhead with pin-point accuracy to its target. Once launched, the wings and fins deploy and a ram-jet engine cuts-in providing high speed power to the missile. Sophisticated radar interfaced with an advanced on board computer guides the Cruise Missile at tree-top altitudes over enemy terrain. The Estes near-scale version of this vehicle is a challenging model with blow-molded plastic body, die-cut plastic fins & wings, and injection molded plastic parts. Also featured is a four-color decal sheet, 12" parachute recovery, and wings which swing-out for display.

Boeing Aerospace Company Photo

**Specifications**
Length 12.3" (31.2 cm)
Wing Span 7.75" (19.69 cm)
Weight 2.78 oz. ( 78.8g)

Shipping Wt. 12 oz.

**Recommended Engines**
A8-3 B4-4 (First Flight)
B6-4 B8-5 B14-5 C6-5

Cat. No. 1336 . . **$8.00**

# SKILL LEVEL 5

## MARS LANDER

Skill Level 5
Displays futuristic concept for a planetary exploration and landing vehicle. Spring-loaded landing gear simulates realistic upright touch-down. Big 18" bright orange and white canopy 'chute makes for a really great recovery sequence. Includes highly detailed body panels, colorful scale-like decals, and quick-release engine mount.

**Specifications**

| | | | |
|---|---|---|---|
| Height | 12" (30.5cm) | Diameter | 3.8" (96.5mm) |
| Landing Gear Span | 13.2" (33.5cm) | Weight | 3.0 oz. (85 g) |
| | | Shipping wt. | 16 oz. |

**Recommended Engines**
B4-2 (First Flight) B6-2 C6-3 C5-3

Cat. No. 1243 . . . . . **$11.00**

—NASA Photo

## MERCURY REDSTONE

Skill Level 5
Famous NASA vehicle which boosted Commander Alan Shepard on America's first manned space flight. Beautifully scaled to 1/42nd actual size our Mercury Redstone features intricately detailed fin assemblies and escape tower. Launchings simulate real space missions as Mercury capsule returns via bright orange and white 12" canopy 'chute and rocket desends on larger 18" parachute. Kit includes scale decals and quick-release engine mount.

**Specifications**

| | | | |
|---|---|---|---|
| Length | 23.5" (59.7cm) | Diameter | 1.637" (41.6mm) |
| Weight | 2.1 oz. (60 g) | Shipping wt. | 12 oz. |

**Recommended Engines**
A8-3 B4-4 B6-4 (First Flight) B8-5 B14-5 C6-5

Cat. No. 1241 . . . . . **$7.00**

*Engines, Launch System, Glue, and Paint not included.*

# SKILL LEVEL 5

# GIANT MAXI-BRUTE!

*(1/100th Scale)*

## SATURN V

Skill Level 5

A truly magnificant scale reproduction of the world's most famous rocket.....the mighty Saturn V. First space vehicle to carry men to the moon and most recently utilized to place Skylab in orbit a-around Earth. Scaled to 1/100th of its actual size, our model stands an impressive 43-1/2" tall. Single "D" engine power gives this baby a spectacular Cape Kennedy style liftoff. Apollo cap-sule has life-like recovery with bright 12" orange and white canopy 'chute while big ship returns on giant dual 24" para-chutes. Precision molded plastic engine nozzles and Apollo capsule with escape tower give detailed authenticity. Corrugated body wrap-ons make this one of our most precise scale models. Also includes Tech Report on clustering.

**Specifications**

| | |
|---|---|
| Length | 43.5" (110cm) |
| Diameter | 3.938" (100mm) |
| Weight | 9.9 oz. (280 g) |
| Shipping wt. | 3 lbs., 5 oz. |

**Recommended Engines**

May be flown as 3 engine cluster or single engine.

| | |
|---|---|
| Cluster Power: | C6-3 or C5-3 (3 required) |
| "D" Power: | D12-3 (1 required) |

Cat. No. 1236 . . . . . **$ 28.95**

—NASA Photo

*Engines, Launch System, Glue, and Paint not included*



ESTES
A DAMON COMPANY

# MODEL ROCKET ENGINES

**Reliability-proven in over 165 Million Safe Launchings!**

**Quality-Tested for High Performance Flights!**

**The finest engine made . . . you can depend on it . . . for every flight application!!!**

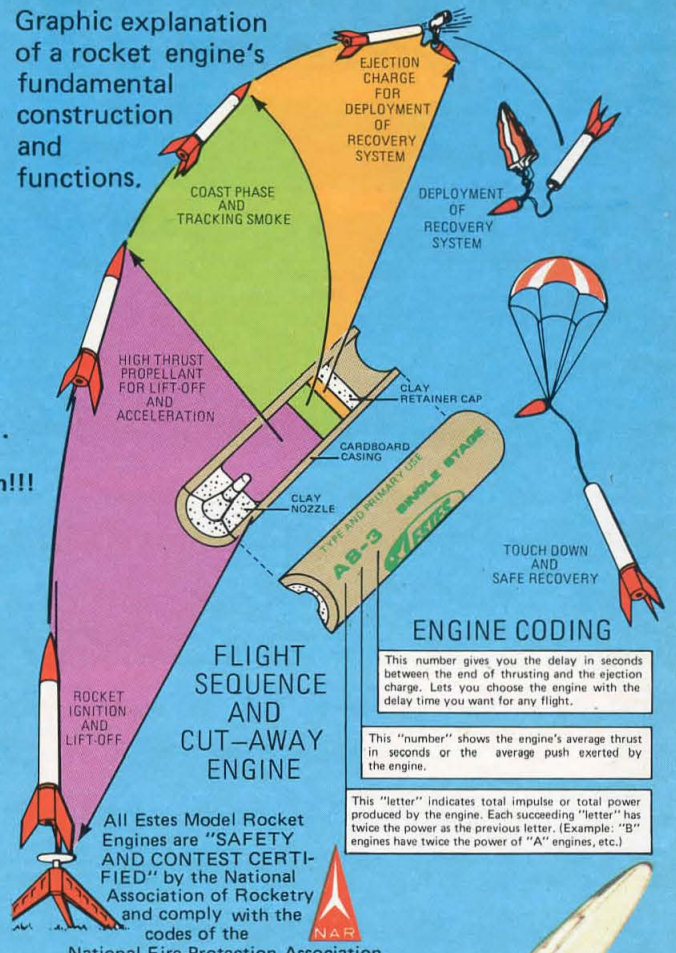
The design and development of the Estes model rocket engine was the real beginning of the safe, educational and exciting hobby that model rocketry has become.

Today's modern rocket engine is the result of over 21 years of engineering efforts at Estes Industries. Consequently, today's rocketeer has dependable, safety-proven engines for his use.

The energy-packed, solid propellant Estes model rocket engine is a complete power system for your rocket. It is designed and pre-manufactured to perform all power functions for dependable launch and activation of a recovery system. In one compact package it provides thrust for quick lift-off and acceleration to high altitudes, allows for a timed delay period to reach peak altitude while delivering a smoke trail for easy tracking and supplies ejection power for the parachute or other recovery system for your rocket's safe return to Earth

Reliability-proven in over 150 million launchings. Estes engines are manufactured under controlled conditions within exacting tolerance limits. You can count on them for consistent performance from one launch to the next. You'll launch with confidence in all your model rocketry activities.

Graphic explanation of a rocket engine's fundamental construction and functions.




## ENGINE CODING

This number gives you the delay in seconds between the end of thrusting and the ejection charge. Lets you choose the engine with the delay time you want for any flight.

This "number" shows the engine's average thrust in seconds or the average push exerted by the engine.

This "letter" indicates total impulse or total power produced by the engine. Each succeeding "letter" has twice the power as the previous letter. (Example: "B" engines have twice the power of "A" engines, etc.)

All Estes Model Rocket Engines are "SAFETY AND CONTEST CERTIFIED" by the National Association of Rocketry and comply with the codes of the National Fire Protection Association.

NAR

**Educational See-Thru Rocket with Recovery System, 10" Parachute, Engine Mount, and Cut-Away Engine!**

## PHANTOM

Skill Level 1

Perfect static demonstration model for workshops and presentations.

Shows all internal components of a model rocket plus special cut-away version of C6-5 model rocket engine.

Ideal for displays and exhibits.

| | |
|---|---|
| Length | 12.6" (32.0 cm) |
| Body Dia. | 0.976" (24.8 mm) |
| Weight | 1.35 oz. (38.3 g) |
| Shipping wt. | 3 oz. |

Cat. No. 1207 . . . . . **$3.95**

# ROCKET ENGINE SELECTION CHART

| Cat. No. | | Engine Type | Prices 3 for | Total Impulse lb-sec ① | Total Impulse n-sec ② | Time Delay (± 15%) | Max. Lift Wt. | Max. Thrust | Thrust Duration | Initial Weight Oz. | Initial Weight G | Propellant Weight Oz. | Propellant Weight G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SINGLE STAGE ENGINES** | | | | | | | | **GREEN LABEL** | | | | | |
| 1593 | | 1/2A6-2 | 3 for $1.95 | 0.28 | 1.25 | 2 sec. | 2.5 oz. | 46 oz. | 0.20 sec. | 0.53 | 15.0 | 0.055 | 1.56 |
| 1598 | | A8-3 | 3 for $2.05 | 0.56 | 2.50 | 3 sec. | 4.0 oz. | 48 oz. | 0.32 sec. | 0.57 | 16.2 | 0.110 | 3.12 |
| 1601 | | B4-2 | 3 for $2.15 | 1.12 | 5.00 | 2 sec. | 4.0 oz. | 48 oz. | 1.20 sec. | 0.70 | 19.8 | 0.294 | 8.33 |
| 1602 | | B4-4 | 3 for $2.15 | 1.12 | 5.00 | 4 sec. | 3.5 oz. | 48 oz. | 1.20 sec. | 0.74 | 21.0 | 0.294 | 8.33 |
| 1605 | | B6-2 | 3 for $2.15 | 1.12 | 5.00 | 2 sec. | 4.5 oz. | 48 oz. | 0.83 sec. | 0.68 | 19.3 | 0.220 | 6.24 |
| 1606 | | B6-4 | 3 for $2.15 | 1.12 | 5.00 | 4 sec. | 4.0 oz. | 48 oz. | 0.83 sec. | 0.71 | 20.1 | 0.220 | 6.24 |
| 1620 | ★ | B8-5 | * 3 for $2.25 | 1.12 | 5.00 | 5 sec. | 5.0 oz. | 5 lb. | 0.60 sec. | 0.68 | 19.3 | 0.220 | 6.24 |
| 1617 | ★ | C5-3 | 3 for $2.35 | 2.25 | 10.00 | 3 sec. | 8.0 oz. | 5 lb. | 2.10 sec. | 0.90 | 25.5 | 0.450 | 12.70 |
| 1613 | | C6-3 | 3 for $2.35 | 2.25 | 10.00 | 3 sec. | 4.0 oz. | 48 oz. | 1.70 sec. | 0.88 | 24.9 | 0.440 | 12.48 |
| 1614 | | C6-5 | 3 for $2.35 | 2.25 | 10.00 | 5 sec. | 4.0 oz. | 48 oz. | 1.70 sec. | 0.91 | 25.8 | 0.440 | 12.48 |
| **UPPER STAGE ENGINES ③** | | | | | | | | **PURPLE OR BLUE LABEL** | | | | | |
| 1594 | | 1/2A6-4 | 3 for $1.95 | 0.28 | 1.25 | 4 sec. | 1.0 oz. | 46 oz. | 0.20 sec. | 0.54 | 15.3 | 0.055 | 1.56 |
| 1599 | | A8-5 | 3 for $2.05 | 0.56 | 2.50 | 5 sec. | 2.0 oz. | 48 oz. | 0.32 sec. | 0.62 | 17.6 | 0.110 | 3.12 |
| 1604 | | B4-6 | 3 for $2.15 | 1.12 | 5.00 | 6 sec. | 1.5 oz. | 48 oz. | 1.20 sec. | 0.78 | 22.1 | 0.294 | 8.33 |
| 1607 | | B6-6 | 3 for $2.15 | 1.12 | 5.00 | 6 sec. | 2.0 oz. | 48 oz. | 0.83 sec. | 0.78 | 22.1 | 0.220 | 6.24 |
| 1621 | ★ | B8-7 | * 3 for $2.25 | 1.12 | 5.00 | 7 sec. | 2.5 oz. | 5 lb. | 0.60 sec. | 0.72 | 20.4 | 0.220 | 6.24 |
| 1615 | | C6-7 | 3 for $2.35 | 2.25 | 10.00 | 7 sec. | 2.5 oz. | 48 oz. | 1.70 sec. | 0.95 | 26.9 | 0.440 | 12.48 |
| **BOOSTER ENGINES** | | | | | | | | **RED LABEL** | | | | | |
| 1595 | | 1/2A6-0 | 3 for $1.95 | 0.28 | 1.25 | none | 4.0 oz. | 46 oz. | 0.18 sec. | 0.48 | 13.6 | 0.055 | 1.56 |
| 1600 | | A8-0 | 3 for $2.05 | 0.56 | 2.50 | none | 4.0 oz. | 48 oz. | 0.30 sec. | 0.51 | 14.2 | 0.110 | 3.12 |
| 1608 | | B6-0 | 3 for $2.15 | 1.12 | 5.00 | none | 4.0 oz. | 48 oz. | 0.80 sec. | 0.58 | 16.4 | 0.220 | 6.24 |
| 1622 | ★ | B8-0 | * 3 for $2.25 | 1.12 | 5.00 | none | 6.0 oz. | 5 lb. | 0.60 sec. | 0.60 | 17.0 | 0.220 | 6.24 |
| 1616 | | C6-0 | 3 for $2.35 | 2.25 | 10.00 | none | 4.0 oz. | 48 oz. | 1.68 sec. | 0.80 | 22.7 | 0.440 | 12.48 |

Complete instructions and rocket igniters are included with eack package of Estes model rocket engines.

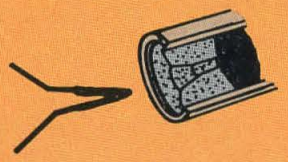
*Series II engines have semi-core-burning grain with large propellant burning area for high initial thrust with short thrust duration. New "B8" type engines replace previous "B14" type engines.

*All engines listed on this page are 2.75 in. (6.99 cm) long and 0.690 in. (1.75 cm) dia.*

★ ***Indicates "NEW" Rocket Engine.*** *Shipping weight of each package of engines is approximately 4 oz.*

## -IMPORTANT- IMPORTANT- IMPORTANT-

**All the rockets shown in this catalog can be flown over and over again. Simply replace the engine, igniter, and recovery wadding for each new flight.**



**ASTRON IGNITERS:** Easy to use for reliable ignition every time. Recommended for launch systems using 6 to 12 volt car batteries or 12 volt lantern batteries. Installation procedure featured on engine instructions. (Patent No. 3,363,559). Shipping weight 1 oz. (Not recommended for Solar Launch Controller or Big Foot Launch Systems.

Cat. No. 2225 ..... **6 for $.95**

**SOLAR IGNITERS:** Add increased reliability at lift-off with Estes "high performance" Solar Igniters. This uprated igniter is designed especially for the Solar Launch Controller (#2300) and Big Foot Launch Control System (#2208). Features easy engine installation and is suitable for all Estes launch control systems. Unique four-element design makes it the most dependable igniter made. Shipping weight 1 oz.

Cat. No. 2301 ..... **6 for $ .95**



# MINI-ENGINE SELECTION CHART

| Cat. No. | Engine Type | Prices 4 for | Total Impulse lb-sec ① | Total Impulse n-sec ② | Time Delay (± 15%) | Max. Lift Wt. | Max. Thrust | Thrust Duration | Initial Weight Oz. | Initial Weight G | Propellant Weight Oz. | Propellant Weight G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SINGLE STAGE ENGINES** | | | | | | | | | | | | |
| 1500 | 1/4A3-2T | 4 for $2.05 | 0.14 | 0.625 | 2 sec. | 1 oz. | 23 oz. | 0.18 sec. | 0.173 | 4.9 | 0.031 | 0.88 |
| 1503 | 1/2A3-2T | 4 for $2.25 | 0.28 | 1.25 | 2 sec. | 2 oz. | 28 oz. | 0.36 sec. | 0.198 | 5.6 | 0.062 | 1.75 |
| 1506 | A3-2T | 4 for $2.15 | 0.56 | 2.50 | 2 sec. | 3 oz. | 28 oz. | 0.86 sec. | 0.254 | 7.2 | 0.124 | 3.50 |
| 1507 | A3-4T | 4 for $2.25 | 0.56 | 2.50 | 4 sec. | 2 oz. | 28 oz. | 0.86 sec. | 0.268 | 7.6 | 0.124 | 3.50 |
| 1511 | A10-3T | 4 for $2.25 | 0.56 | 2.50 | 3 sec. | 5 oz. | 48 oz. | 0.26 sec. | 0.277 | 7.9 | 0.133 | 3.78 |
| **UPPER STAGE ENGINES ③** | | | | | | | | | | | | |
| 1501 | 1/4A3-4T | 4 for $2.05 | 0.14 | 0.625 | 4 sec. | 1 oz. | 23 oz. | 0.18 sec. | 0.187 | 5.3 | 0.031 | 0.88 |
| 1504 | 1/2A3-4T | 4 for $2.15 | 0.28 | 1.25 | 4 sec. | 1 oz. | 28 oz. | 0.36 sec. | 0.212 | 6.0 | 0.062 | 1.75 |
| 1508 | A3-6T | 4 for $2.25 | 0.56 | 2.50 | 6 sec. | 1 oz. | 28 oz. | 0.86 sec. | 0.282 | 8.0 | 0.124 | 3.50 |
| **BOOSTER STAGE ENGINES** | | | | | | | | | | | | |
| 1505 | 1/2A3-0T | 4 for $2.15 | 0.28 | 1.25 | none | 3 oz. | 28 oz. | 0.36 sec. | 0.166 | 4.7 | 0.062 | 1.75 |
| 1509 | A3-0T | 4 for $2.25 | 0.56 | 2.50 | none | 3 oz. | 28 oz. | 0.86 sec. | 0.226 | 6.4 | 0.124 | 3.50 |
| 1510 | A10-0T | 4 for $2.25 | 0.56 | 2.50 | none | 5 oz. | 48 oz. | 0.26 sec. | 0.235 | 6.7 | 0.133 | 3.70 |

*Mini-Engines are 1.75 in. (4.45cm) long and .500 in. (1.27cm) dia. Shipping weight of each package of mini-engines is approximately 2-1/2 oz.*

# MIGHTY "D" ENGINES

**Recommended Only for Experienced Rocketeers!**

| Cat. No. | Engine Type | Prices 3 for | Total Impulse lb-sec ① | Total Impulse n-sec ② | Time Delay (± 15%) | Max. Lift Wt. | Max. Thrust | Thrust Duration | Initial Weight Oz. | Initial Weight G | Propellant Weight Oz. | Propellant Weight G |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SINGLE STAGE ENGINES** | | | | | | | | | | | | |
| 1666 | D12-3 | 3 for $4.25 | 4.48 | 20.0 | 3 sec. | 14 oz. | 9 lb. | 1.50 sec. | 1.49 | 42.2 | 0.879 | 24.93 |
| 1667 | D12-5 | 3 for $4.25 | 4.48 | 20.0 | 5 sec. | 10 oz. | 9 lb. | 1.50 sec. | 1.52 | 43.1 | 0.879 | 24.93 |
| **SINGLE AND UPPER STAGE ENGINES ③** | | | | | | | | | | | | |
| 1668 | D12-7 | 3 for $4.25 | 4.48 | 20.0 | 7 sec. | 8 oz. | 9 lb. | 1.50 sec. | 1.55 | 44.0 | 0.879 | 24.93 |
| ★ 1669 | D11-9 | 3 for $4.25 | 3.37 | 15.0 | 9 sec. | 8 oz. | 6.3 lb. | 1.40 sec. | 1.51 | 42.9 | 0.65 | 18.50 |
| **BOOSTER STAGE ENGINES** | | | | | | | | | | | | |
| 1665 | D12-0 | 3 for $4.25 | 4.48 | 20.0 | none | 14 oz. | 9 lb. | 1.48 sec. | 1.44 | 40.9 | 0.879 | 24.93 |

**RECOVERY WADDING:** Provides protection from hot ejection gases for parachutes and streamers. Each package contains approximately 75—4-1/2" squares—enough wadding for up to 25 flights. Instructions for installation are included in each package. Shipping weight 6 oz.

Cat. No. 2274 ..... **$1.00**

Complete instructions and rocket igniters are included with each package of Estes model rocket engines.

*"D" engines are 2.75 in. (6.99cm) long and 0.945 in. (2.40cm) dia.*

*Shipping weight of each package of "D" engines is approximately 6-1/2 oz.*

**NOTES:**

① Pound - seconds (Figures shown are maximum.)

② Newton - seconds (Figures shown are maximum.)

③ Or Single Stage Engine if used in very light rocket.

ESTES
A DAMON COMPANY

# FIN ALIGNMENT GUIDE

NEW!

Position and glue fins quickly and easily. Fits body tubes up to BT-101. Designed for either 3 or 4 finned rockets, aligning fins at 90°or 120°to each other. Easily assembled with slip-together plastic parts. Adjusts quickly with plastic fin position clips.
Ship. Wt. 3 lbs.
Cat. No. 2231 . . . . . .

**ONLY $6.00**

ESTES

## Designer's Special

Ideal parts assortment for the creative rocketeer. Develop your own R & D Program. Over 75 pieces at an excellent savings!

**Body Tubes**
2 BT-5
2 BT-20
2 BT-50
1 BT-55
1 BT-60

**Nose Cone**
1 BNC-5E
1 BNC-5S
1 BNC-20B
1 BNC-20R
1 PNC-50K
1 PNC-50Y
1 PNC-55AC
1 PNC-60L

**Fin Material**
2 BFS-20
2 BFS-30
2 BFS-40

**Parachutes**
1 PK-8
2 PK-12
1 PK-18
1 PK-24

**Recovery Equipment**
3 Shock Cord 1/8"X18"
1 Shock Cord 1/8"X36"
1 Shock Cord 1/4"X36"
1 Streamer Material 1"X30"
6 Screw Eyes

**Miscellaneous**
3 Engine Blocks (EB-20A)
3 Engine Holders (EH-3)
3 Engine Holders (EH-2)
1 Engine Mount (EH-2050)
1 Engine Mount (EH-2060)
1 Nose Block (NB-20)
1 Nose Block (NB-50)
1 Stage Coupler (JT-55C)
1 Stage Coupler (JT-60C)
1 Balsa Adapter (TA-2050A)
1 Multi-Purpose Paper Adapter Set (TA-1)
12 Launch Lugs (2-3/8" long)
1 Alpha Book of Model Rocketry
1 Fin Pattern Sheet No. 2
1 Fin Pattern Sheet No. 3

**Ship. Wt. 2 lbs.**
Cat. No. 1463 . . . .

**Only $15.95**



# Big Foot™

## MODEL ROCKET LAUNCH CONTROL SYSTEM

Rocket not included

"Designed for the Big Ones!"

Requires four "D" cell batteries for power (not included). Use alkaline type for best results.

Only **$15.95**

The all new Estes Big Foot launch control system is capable of launching all Estes models including Maxi-Brutes. Futuristically designed launch platform features rugged plastic construction and enormous "two foot print" for maximum launch pad stability. Includes blast deflector plate, 1/8" x 36" two-piece launch rod, adjustable swivel mount to compensate for wind direction which is adaptable to either 1/8" or 3/16" launch rods, and has legs which remove easily for compact storage. This launch control unit is newly engineered for simple, quick assembly and features safety key, continuity check light, ignition button and 15 feet of launch cable. Uses 4 inexpensive "D" cell batteries and Estes Solar Igniters #2301 (not included). Shipping weight 2 lbs. Cat. No. 2208

## TRACKING EQUIPMENT

### AltiTrak™ *Altitude Finder*

Skill Level 1
Track your rocket to the top of its flight and instantly lock-in its altitude on the "new" AltiTrak altitude finder. Displays exact model rocket altitude on metric scale--no guessing! (Conversion table included for feet.) A precision instrument made of durable plastic. Easy-to-assemble and looks like futuristic laser pistol. How high did it go? Now you'll know! Ship. wt. 15 oz.
Cat. No. 2232 **Only $6.00**

### PREDICTED ALTITUDE COMPUTER

The Estes Pocket Size Altitude Computer enables any rocketeer to predict his model rockets altitude in a matter of seconds. Just move the center slide in a simple procedure for fast, accurate results. Three color calculator comes complete with instructions. Ship. wt. 3 oz.
Cat. No. 9015 . . . . . **$1.45**

# SOLAR LAUNCH CONTROLLER

## MODEL ROCKETRY'S MOST ADVANCED LAUNCH SYSTEM

The Solar Launch Control System should be standard equipment in your range box. This futuristically designed launch control unit requires only 4 alkaline AA pen light batteries for power. Advanced shape allows for perfect hand held control. Unit is easily assembled in minutes and features safety key, continuity check lamp, ignition button, and 15 feet of lightweight launch cable. System is constructed of durable "non-breakable" plastic. Micro-clips are presoldered. Use with Estes Solar Igniters (#2301). (Batteries not included.) Length 6.13" (15.57 cm); Height 2.38" (6.05 cm); Width 1.44" (3.66 cm); Weight (with batteries) 7 oz. (199 g).

Shipping weight 8 oz.

Cat. No. 2300 . . . . . **$7.95**

**Here's The Perfect Launch Pad For Most All Your Birds!**

# PORTA-PAD

## PLASTIC LAUNCH PAD

*Rocket Not Included*

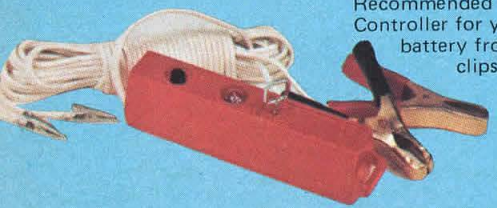
Space-age designed, the Porta-Pad is rugged enough to take the stress of countless launchings, even with the big Estes "D" engines, yet is lightweight and compact enough for easy carrying and storage. Strong, girder construction. Orange plastic legs snap off for storage in range box. Friction grip secures rod firmly. Accomodates standard 1/8" rod (#2234) or heavy-duty 3/16" Maxi-Rod (#2239). Tilt adjustment allows you to compensate for wind.

Shipping weight is 1 lb. 8 oz.

Cat. No. 2217 . . . . . **$7.00**

# Astron Launch Control System

Newly redesigned Launch Controller features futuristic design and provides greater reliability with simplified assembly. Bright orange plastic controller gives realistic ignition system appearance. Recommended for 6 or 12 volt power sources. Perfect Launch Controller for your 12 volt car battery. No need to remove battery from car, simply connect launch system's battery clips to terminals. Features include arming lamp, safety key, launch button, battery clips, micro-clips, and 18 feet of launch cable.



Shipping weight 12 oz.

Cat. No. 2212 . . . . . **$7.00**

The Solar Launch Controller (#2300) or the Astron Launch Control System (#2212) are the recommended launch control systems for use with the Porta-Pad (#2217).



## LAUNCH SUPPLIES

(Cont'd on page 60.)

**1/8" DIA. TWO-PIECE LAUNCH ROD:** Handy collapsible two-piece rod for portable launchers. Pieces slip together to make a 36" long rod. Base rod has a diameter of 1/8". Shipping weight 6 oz.
Cat. No. 2234 . . . . . **$ .95**

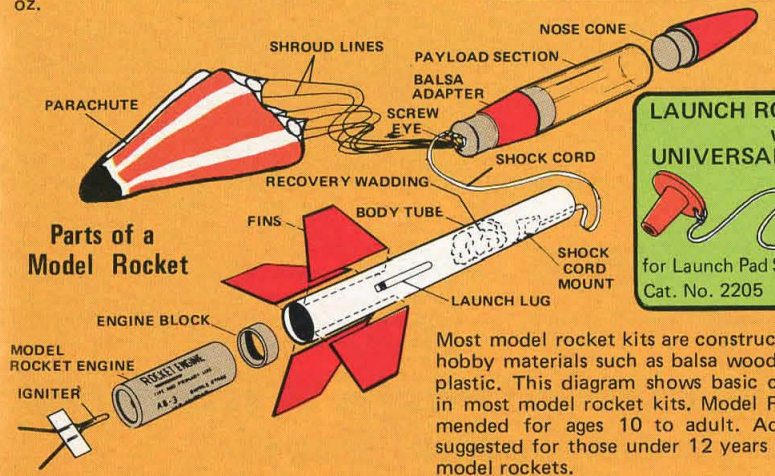
**MICRO-CLIPS:** Equip your launcher with the best. Spring-loaded solid steel clips connect lead wires to igniters. Easy-to-clean and highly conductive with flat contact surfaces. Only 1.1 inches long. Attach to leads with or without solder. Ship. wt. 1 oz.
Cat. No. 2247 . . . . **2 for $ .85**

**3/16" DIA. MAXI-ROD:** Perfect for launching Maxi-Brute kits and other large rockets. Fits Porta-Pad Tripod (#2217) and Big Foot™ Launch Pad (#2208). Two-piece construction. 36" long, light-weight aluminum launch rod. Collapsible for easy storage.
Ship. wt. 12 oz.
Cat. No. 2239 . . . . . **$1.95**

## RECOVERY SUPPLIES

**PARACHUTE KITS:** Get the best in parachute recovery! Two-color printed plastic 'chute give maximum visibility with easy-trak design. Lightweight, durable, and easily folded. These 'chutes are only 0.0075" thick, allowing the most material to be packed into the least body space. Each kit comes complete with 'chute material, tape discs, and shroud lines. Shipping weight 2 oz.

| Cat. No. | Description | Parachute Diameter | Net Weight | Price Each |
|---|---|---|---|---|
| 2261 | PK-8 | 8 inches | .035 oz. | $ .90 |
| 2264 | PK-12 | 12 inches | .078 oz. | $ .95 |
| 2267 | PK-18 | 18 inches | .144 oz. | $1.00 |
| 2271 | PK-24 | 24 inches | .298 oz. | $1.20 |




**Parts of a Model Rocket**

Most model rocket kits are constructed of light-weight hobby materials such as balsa wood, paper tubing and plastic. This diagram shows basic components found in most model rocket kits. Model Rocketry is recommended for ages 10 to adult. Adult supervision is suggested for those under 12 years of age when flying model rockets.

**LAUNCH ROD SAFETY CAP with UNIVERSAL SAFETY KEY**

for Launch Pad Safety! Ship wt. 4 oz.
Cat. No. 2205 **Only 50¢**

**SHOCK CORD:** Specify width when ordering. Shipping weight 1 oz.
1/8" wide: Net wt. 0.039 oz.,
Cat. No. 2276 . . . . . **$ .45**
1/4" wide: Net wt. 0.078 oz.,
Cat. No. 2277 . . . . . **$ .50**

Also 36" long for greater stretch on those larger birds.
1/8" wide: Net wt. 0.078 oz.,
Cat. No. 85744 . . . . . **$ .55**

**TAPE DISCS:** Fasten shroud lines to plastic parachutes or streamers with these 3/4" dia. pressure sensitive Tape Discs. In sheets of 6 discs. Shipping weight 1 oz.
Cat. No. 2294
**4 sheets of 6 for $ .95**

**STREAMER MATERIAL:** Bright orange, flame-resistant crepe paper streamers. In 7½-foot lengths, enough for two to eights streamers. Specify size when ordering.
Shipping wt. 1 oz.
1" wide — Net wt. .092 oz.
Cat. No. 2341 . . . **6 for $1.70**
2" wide — Net wt. .184 oz.
Cat. No. 2343 . . . **6 for $1.95**

**SCREW EYES:** Specify size when ordering. Shipping wt. for 6 eyes, 1 oz.
LARGE EYE:
1" long; .04 oz.
Cat. No. 2280 . . . **6 for $ .90**
SMALL EYE:
3/4" long; .03 oz.
Cat. No. 2279 . . . **6 for $ .85**
EXTRA SMALL EYE:
5/8" long; .01 oz.
Cat. No. 2281 . . . **6 for $ .75**

**SHROUD LINES:** Build reliable, durable, custom parachutes with this strong, hard surface shroud line cord. Comes in 70 yard spools. Shipping weight 5 oz.
Cat. No. 2340 . . . . . **$1.00**

**TAPE STRIPS:** For top strength, low bulk and low weight, fasten shroud lines with these 1/4" x 3/4" tape strips, in sheets of 12 strips. Shipping weight 1 oz.
Cat. No. 38412
**6 sheets of 12 for $1.00**

**SNAP SWIVELS:** For quick changes and reduced tangling in your recovery systems, use these tiny 1" long snap swivels. Net weight .01 oz.
Shipping weight for 12 swivels, 1 oz. Cat. No. 2292
**12 for $1.35**

# ENTER THE DESIGN OF THE MONTH CONTEST..

## YOUR DESIGN COULD WIN YOU A $75.00 MERCHANDISE CERTIFICATE

Have an idea for an original design? Enter our Design of the Month competition today. Your design could be published in an issue of Model Rocket News, plus win you $75.00 in FREE merchandise from this catalog. Simply follow the rules below. Keep those entries coming, and maybe you'll be our next winner!! **GOOD LUCK!!**

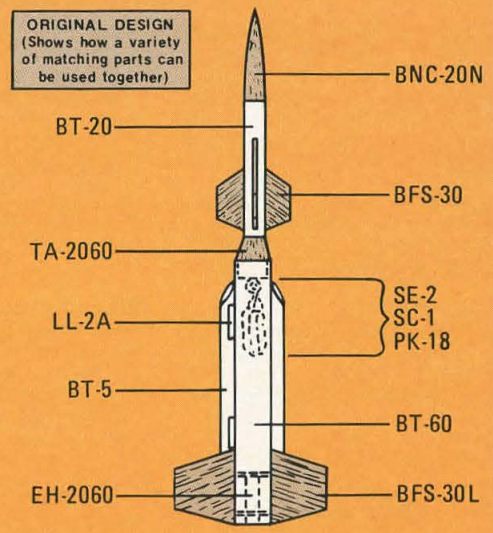
### DESIGN OF THE MONTH RULES

1. All entries become the property of Estes Industries and cannot be returned.
2. Employees of Estes Industries and members of their immediate families are not eligible.
3. Any type of model rocketry design can be entered (rockets, boost-gliders, launching or recovery devices, etc.).
4. Designs should be new, original, and different, but they also need to be workable. The goal is to develop something new that other rocketeers can build and use successfully, too.
5. Entries will be judged on practicality, originality, neatness, completeness, and clarity. All plans must be flight tested and proven.
6. Your design entry should include a parts list and any instructions or diagrams you feel would be helpful.
7. Please do not send the actual model as it cannot be returned.
8. Photos of entries are greatly appreciated, but are not required.
9. You may send as many entries as you like.
10. New contest every month.
11. All designs reaching Estes Industries during the calendar month will be entered in that month's competition. (Date of receipt, not postmark, will determine the month in which a design will be entered).
12. If two or more exceptional entries are received during any month, the judges may, at their discretion, make identical first-place awards or give additional honorable mentions.
13. Designs should be sent to the Design of the Month Editor, Estes Industries, Inc., Penrose, Colorado 81240. However, all plans sent to us which are not specifically addressed to another contest or department will be automatically placed in the Design of the Month Competition.
14. Each month the designer of the winning entry will receive a certificate entitling him to $75.00 in merchandise and an award certificate suitable for framing. Award winners will be notified by mail.

# Build Your Own Design With Estes Quality Model Rocket Parts

Once you have constructed several model rocket kits and have become familiar with the basic Estes Technical Reports you will no doubt have a variety of ideas for unique designs of your own. In order to select the proper parts for your original design it is important for you to understand our system of parts description numbers.

Nearly all matching Estes parts have the same series description number. Those which do not feature an additional explanation as to where they can be used. Normally, parts listing the same series description number will be interchangeable with each other. For instance, a # 20 body tube (BT-20) would mate with a #20A balsa nose cone (BNC-20A), a #20C payload section (PS-20C), or a #20B engine block (EB-20B). Further, a #2060 tube adapter (TA-2060) will adapt a BT-20 to a BT-60, and a #5055 centering ring (AR-5055) will center a BT-50 within a BT-55. By using balsa or paper adapters almost any combination of parts can be joined together. For ordering, be sure to use both the catalog number and the series description number (name).





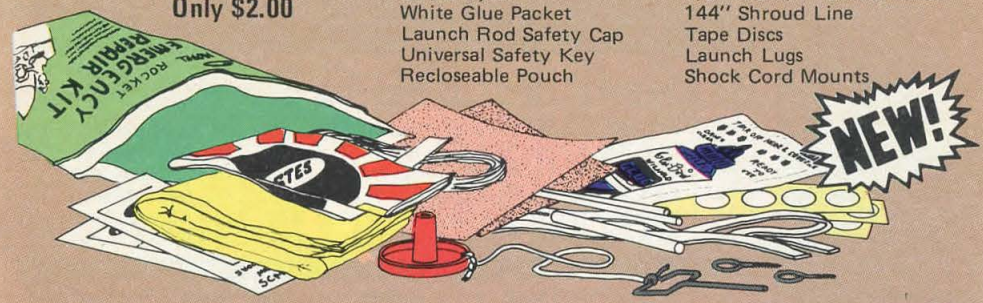

# EMERGENCY REPAIR KIT

A must for every range box. Features many essential materials for "on-the-spot" repair of your model rockets.

Ship. wt. 8 oz. Cat. No. 2233

**Only $2.00**

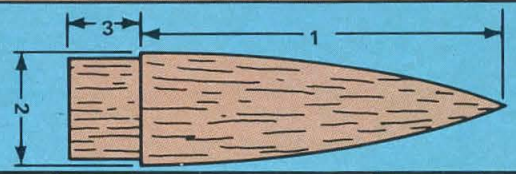
Includes:
- Sandpaper
- Screw Eyes
- White Glue Packet
- Launch Rod Safety Cap
- Universal Safety Key
- Recloseable Pouch
- Recovery Wadding
- 12" Parachute
- 1/8" and 1/4" Shock Cords
- 144" Shroud Line
- Tape Discs
- Launch Lugs
- Shock Cord Mounts




## NOSE CONES

Nose cone dimensions listed in columns 1, 2, and 3.

In "Description" column BNC stands for balsa nose cone and PNC for plastic nose cone.




| Shape | No. | Cat. No. | Description | Price Each | Dimensions 1 | 2 | 3 | Average Weight | Ship. Wt. |
|---|---|---|---|---|---|---|---|---|---|
| BT-5 | 1 | 8002 | BNC-5V | $ .85 | 3/4" | 0.541" | 1/4" | 0.013 oz. | 1 oz. |
| | 2 | 8000 | BNC-5E | $ .85 | 1-3/8" | 0.541" | 1/4" | 0.020 oz. | 1 oz. |
| | 3 | 8001 | BNC-5S | $ .85 | 1-1/2" | 0.541" | 1/4" | 0.016 oz. | 1 oz. |
| | 4 | 8003 | BNC-5W | $1.00 | 2-7/8" | 0.541" | 1/4" | 0.039 oz. | 2 oz. |
| BT-20 | 5 | 8004 | BNC-20A | $ .75 | 13/16" | 0.736" | 1/4" | 0.03 oz. | 1 oz. |
| | 6 | 8005 | BNC-20B | $ .90 | 1-11/16" | 0.736" | 5/16" | 0.05 oz. | 1 oz. |
| | 7 | 8007 | BNC-20R | $1.00 | 2-3/4" | 0.736" | 3/8" | 0.07 oz. | 2 oz. |
| | 8 | 8006 | BNC-20N | $1.10 | 2-3/4" | 0.736" | 1/2" | 0.08 oz. | 2 oz. |
| BT-50 | 9 | 8008 | BNC-50J | $1.00 | 1-3/8" | 0.976" | 1/2" | 0.08 oz. | 4 oz. |
| | 10 | 8009 | BNC-50K | $1.15 | 2-3/4" | 0.976" | 1/2" | 0.13 oz. | 4 oz. |
| | 10 | 71008 | PNC-50K | $ .95 | 2-3/4" | 0.976" | 1/2" | 0.13 oz. | 4 oz. |
| | 11 | 8010 | BNC-50X | $1.25 | 3-1/4" | 0.976" | 1/2" | 0.15 oz. | 4 oz. |
| | 12 | 8011 | BNC-50Y | $1.50 | 4-3/8" | 0.976" | 3/8" | 0.16 oz. | 6 oz. |
| | 12 | 71009 | PNC-50Y | $1.35 | 4-3/8" | 0.976" | 3/8" | 0.16 oz. | 6 oz. |
| BT-55 | 13 | 8012 | BNC-55AA | $1.40 | 3-1/8" | 1.325" | 1/2" | 0.15 oz. | 4 oz. |
| | 14 | 8014 | BNC-55F | $1.70 | 3-7/8" | 1.325" | 1/2" | 0.19 oz. | 4 oz. |
| | 15 | 71070 | PNC-55AC | $1.80 | 5-3/8" | 1.325" | 3/8" | 0.32 oz. | 6 oz. |
| | 16 | 71075 | PNC-55AO | $1.75 | 5" | 1.325" | 3/4" | 0.43 oz. | 4 oz. |
| BT-60 | 17 | 8020 | PNC-60L | $1.50 | 3-1/8" | 1.637" | 5/8" | 0.34 oz. | 4 oz. |
| | 18 | 8021 | PNC-60AH | $2.70 | 6-5/8" | 1.637" | 7/8" | 1.0 oz. | 6 oz. |
| BT-70 | 19 | 8019 | BNC-70AJ | $2.95 | 4-1/4" | 2.217" | 1" | 0.85 oz. | 6 oz. |
| BT-101 | 20 | 71050 | PNC-101 | $2.70 | 12-1/2" | 3.938" | 3/4" | 3.60 oz. | 12 oz. |

# LAUNCH SUPPLIES

(Cont'd from page 57.)

**BATTERY CLIPS:** Hook-up to car batteries. Heavy-duty clips connect to terminals up to 1" in dia. With insulators. Ship. wt. 5 oz.
Cat. No. 2245 . . . **2 for $1.05**

**BLAST DEFLECTOR PLATE:** Slip-on metal deflector plate fits any launcher using 1/8" or 3/16" rods, protects launcher base from rocket blast. Four-inch diameter. Shipping weight 5 oz.
Cat. No. 2241 . . . . . **$1.10**

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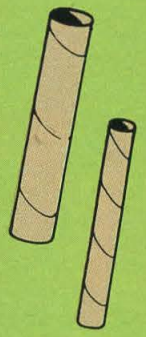
**ADD-ON ROD:** Sturdy 1/8" diameter, 18" long launch rod section expands two-piece rod to 54" length. Ship. wt. 6 oz.
Cat. No. 2236 **$ .50 per section**

## FIN STOCK

Top quality balsa sheeting for making fins for model rockets. For maximum strength, grain of wood should follow the leading edge of fin.

| Cat. No. | Description | Price | Dimensions (In Inches) | Weight in Oz. Net. | Ship. | Major Use |
|---|---|---|---|---|---|---|
| 3164 | BFS-20 | 3 for $ .90 | 1/16x3x9 | .130 | 4 | High Performance |
| 3166 | BFS-20L | 3 for $1.10 | 1/16x3x12 | .173 | 6 | High Performance |
| 3168 | BFS-30 | 3 for $ .95 | 3/32x3x9 | .150 | 4 | Sport Models |
| 3170 | BFS-30L | 3 for $1.15 | 3/32x3x12 | .200 | 6 | Sport Models |
| 3172 | BFS-40 | 3 for $1.10 | 1/8x3x9 | .200 | 4 | Cluster Rockets |
| 3174 | BFS-40L | 3 for $1.15 | 1/8x3x12 | .265 | 6 | Glider Wings |

## BODY TUBES



| Cat. No. | Description | Price Each | Length | Inside Diameter | Outside Diameter | Wall Thickness | Weight in Oz. Net. | Ship. |
|---|---|---|---|---|---|---|---|---|
| **Spiral-Wound Paper Tube for nose sections and strap-on payloads** | | | | | | | | |
| 3070 | BT-5 | $ .85 | 18" | 0.515" | 0.541" | 0.013" | .219 | 11 |
| **Spiral-Wound Paper Tube, for competition and sport models** | | | | | | | | |
| 3072 | BT-20 | $ .90 | 18" | 0.710" | 0.736" | 0.013" | .288 | 11 |
| **Spiral-Wound Paper Tube, for sport and high performance payload models** | | | | | | | | |
| 3073 | BT-50 | $1.00 | 18" | 0.950" | 0.976" | 0.013" | .378 | 11 |
| **Spiral-Wound Paper Tube, for sport and demonstration models** | | | | | | | | |
| 3074 | BT-55 | $1.25 | 18" | 1.283" | 1.325" | 0.021" | .672 | 11 |
| **Spiral-Wound Paper Tube, for sport and demonstration models** | | | | | | | | |
| 3075 | BT-60 | $1.35 | 18" | 1.595" | 1.637" | 0.021" | .960 | 11 |
| **Spiral-Wound Paper Tube, for monster models and tail rings** | | | | | | | | |
| 3076 | BT-70 | $1.75 | 17.5" | 2.175" | 2.217" | 0.021" | 1.300 | 14 |
| **Spiral-Wound Paper Tube, for giant-scale models** | | | | | | | | |
| 30438 | BT-101 | $2.35 | 16.5" | 3.896" | 3.938" | 0.021" | 1.974 | 16 |

## ENGINE BLOCKS

| Cat. No. | Description | Price 3 for | Outside Dia. | Inside Dia. | Length | Fits | Weight in Oz. Net. | Ship. |
|---|---|---|---|---|---|---|---|---|
| 3131 | EB-20A | 3/$.65 | .708" | .65" | 1/4" | BT-20 | .009 | 1 |

## ENGINE MOUNTS

Use Estes, high performance engine mounts for your original designs. All engine mounts feature easy-to-assemble instructions and lightweight components.

| Engine Type | Cat. No. | Description | Price | Fits | Net Weight Oz. | Ship. Wt. Oz. |
|---|---|---|---|---|---|---|
| For Series I & II Engines—A, B, & C type 0.69"x2.75" | 3150 | EH-2050 | $ .95 | BT-50 | 0.1 | 5 |
| | 3151 | EH-2055 | $ .95 | BT-55 | 0.14 | 5 |
| | 3152 | EH-2060 | $ .95 | BT-60 | 0.17 | 5 |
| For Series IV Engines-D type 0.945" x 2.75" | 3155 | EM-5063 | $1.20 | Saturn V | 0.4 | 5 |
| For T Series Mini-Engines .5"x1.75" | 3153 | EM-520 | $ .90 | BT-20 | 0.09 | 5 |
| Special Purpose Quick-Change Conversion Mount —From Series IV Engines to Series I & II Engines | 3154 | EM-2050 | $1.00 | BT-50 | 0.19 | 5 |



# CENTERING RINGS

**AR-5055 CENTERING RINGS**
To center a BT-50 tube in a BT-55 body tube. Extra strong for "D" engine mounts. Weight 0.062 oz. each. Shipping weight 2 oz.
Cat. No. 3102 . . . . . **4 for $ .90**

**AR-2050 CENTERING RINGS**
For centering a BT-20 body tube within a BT-50. Greater strength makes for use with high thrust engines. Weight per pair .285 oz. Shipping weight 3 oz.
Cat. No. 3100 . . . . . **10 for $1.15**

## BALSA ADAPTERS

Adapters give flexibility for rocket design. Switch from one size body tube to another for payload capsules, parachute compartments, propulsion sections, etc. Any adapter can be hollowed to make a passage for ejection gases. All adapters have at least 1/2" mating surface on each end.

| Cat. No. | Description | Price Each | Mates Tubes | Length | Taper Length | Weight Oz. Net. | Ship. |
|---|---|---|---|---|---|---|---|
| 8031 | TA-520 | $ .90 | BT-5 to BT-20 | 1.75" | 0.75" | 0.04 | 1 |
| 8032 | TA-550 | $ .95 | BT-5 to BT-50 | 2.2" | 1.0" | 0.06 | 4 |
| 8041 | TA-2050 | $ .80 | BT-20 to BT-50 | 3.0" | 2.0" | 0.15 | 4 |
| 8033 | TA-2055 | $1.10 | BT-20 to BT-55 | 2.5" | 1.5" | 0.22 | 4 |
| 8034 | TA-2060 | $1.75 | BT-20 to BT-60 | 3.0" | 2.0" | 0.20 | 4 |
| 8035 | TA-5055 | $1.75 | BT-50 to BT-55 | 2.0" | 1.0" | 0.60 | 4 |
| 8036 | TA-5060 | $2.15 | BT-50 to BT-60 | 3.0" | 2.0" | 0.23 | 4 |
| 8038 | TA-5560 | $2.25 | BT-55 to BT-60 | 2.2" | 1.0" | 0.25 | 4 |
| 8039 | TA-6070 | $2.00 | BT-60 to BT-70 | 2.7" | 1.5" | 0.65 | 4 |

## STAGE COUPLERS

For multi-staging, joining body tubes, positioning adapter rings, etc. Make perfect guides for cutting body tubes and sanding cut edges of body tubes, too. Shipping weight for all is 3 oz. each.

| Cat. No. | Description | Price Each | Outside Diameter | Inside Diameter | Length | Fits | Average Weight |
|---|---|---|---|---|---|---|---|
| 3050 | JT-5C | $ .55 | .513" | .455" | 3/4" | BT-5 | .020 oz. |
| 3051 | JT-20C | $ .55 | .708" | .650" | 3/4" | BT-20 | .027 oz. |
| 3052 | JT-50C | $ .60 | .949" | .920" | 1" | BT-50 | .051 oz. |
| 3053 | JT-55C | $ .60 | 1.28" | 1.25" | 1.3" | BT-55 | .088 oz. |
| 3054 | JT-60C | $ .60 | 1.59" | 1.55" | 1-1/2" | BT-60 | .124 oz. |
| 3055 | JT-70A | $ .90 | 2.175" | 2.115" | 1-1/4" | BT-70 | .140 oz. |

## PAPER ADAPTERS

**RA-2055 RINGS** — 10 rings for centering and mounting BT-20 in BT-55. Shipping weight 2 oz.
Cat. No. 3111 . . . . . **$ .85 per set**

**RA-2060 RINGS** — 10 rings for centering and mounting BT-20 in BT-60. Shipping weight 2 oz.
Cat. No. 3113 . . . . . **$ .90 per set**

**MULTI-PURPOSE SET** — Includes a total of 20 rings for positioning BT-5 in BT-20; BT-5, BT-20, BT-30 in BT-50; and BT-5, BT-20 and BT-50 in BT-60. Also three universal tapered shrouds and instructions. Shipping weight 2 oz.
Cat. No. 8030 . . . . . **$1.00**

**RA-2050 RINGS** — 20 rings for centering and mounting BT-20 in BT-50. Shipping weight 2 oz.
Cat. No. 3110 . . . . . **$ .80 per set**

## NOSE BLOCKS

Use these top quality featherweight balsa nose blocks in payload sections and anywhere else a solid bulkhead is required. Precision turned for exact fit in body tubes.

| Cat. No. | Description | Price Each | Outside Diameter | Length | Fits | Weight in Oz. Net. | Ship. |
|---|---|---|---|---|---|---|---|
| 70152 | NB-20 | $ .70 | .710" | 3/4" | BT-20 | .014 | 1 |
| 70158 | NB-50 | $ .80 | .950" | 1" | BT-50 | .040 | 4 |
| 70162 | NB-55 | $ .80 | 1.283" | 1-1/4" | BT-55 | .115 | 4 |
| 70164 | NB-60 | $ .95 | 1.595" | 1-1/2" | BT-60 | .190 | 4 |

## CONSTRUCTION SUPPLIES

**COMPETITION PAYLOAD:**
How high can your rocket lift an ounce of lead? This 1 oz. payload weight, 3/4" in diameter, is certified for NAR competition. Ship. wt. 2 oz.
Cat. No. 38292. . . **2 for $1.45**

**DOWELS:**
Extra strong, lightweight seasoned maple dowels.
Ship. Wt. 5 oz.
1/8" x 18"
Cat. No. 32056 . . **.8 for $ .80**
1/12" x 12"
Cat. No. 32058 . . **.8 for $ .80**

**LAUNCH LUGS:**
Super-strength laminated launch lugs feature mylar plastic core for durability, paper outer layer for easy gluing. Inside diameter 5/32", fit 1/8" rod. Ship. Wt. 1 oz.
1-1/4" long:
Cat. No. 2321 . . . **12 for $1.00**
2-3/8" long:
Cat. No. 2322 . . . **10 for $1.15**
8" long:
Cat. No. 2326. . . . **4 for $1.20**

**MAXI-ROD LAUNCH LUG:**
2" long, fits 3/16" dia. rod.
Cat. No. 2328 . . . **4 for $ .85**

**ENGINE HOLDER:**
Flat spring steel design gives easy installation and low drag. Recommended for sport and demonstration models built from BT-5, and BT-20. For Regular and "D" Engines.
Ship. Wt. 1 oz.
Cat. No. 3140 . . . **3 for $1.20**
For Mini-Engines.
Ship. Wt. 1 oz.
Cat, No. 3142 . . . . **3 for $ .95**

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**AEROSPACE EDUCATION AND MODEL ROCKETRY**
Cat. No. 2816 . . . . . **$1.50**
(Single copies free to educators requesting it on school stationery.)

START A SCHOOL PROGRAM IN MODEL ROCKETRY! Send us your teacher's name, the name of your school, your school's address (include street address, city, state, and zip code). Send to Education Department, Estes Industries, Dept. 51, Penrose, CO 81240. 4-H and Scout adult leaders qualify if they clearly identify their group affiliation.

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# -IMPORTANT INFORMATION-
## Please Read!

-ATTENTION PARENTS, TEACHERS, AND ROCKETEERS-

Please do not be alarmed by the placement of the label illustrated below on shipping cartons containing model rocket engines. When used as directed, Model Rocket Engines "ARE SAFE", and have produced an excellent Safety Record. This label is technically required by law. Please note that "Flammable Solid" label is required only for the transportation of the product and that model rocket engines are considered less of a hazard than model airplane fuel or aerosol paints.

-DON'T MISS A MAILING-

In order for you to receive all Estes mailings be sure to order at least $5.00 worth of merchandise every 6 months. This will assure that your name will be retained on our active mailing list.

-SHIPPING INFORMATION-

The following information is provided in accordance with the requirements set forth in Trade Regulation Rule 435, promulgated by the Federal Trade Commission, effective February 2, 1976.

We normally ship within 72 hours of receipt of your order. On occasion, a product may be temporarily out of stock, in which case we will notify you within 30 days that there will be a delay. Your order will then be filled as soon as possible, but in no event later than 90 days from receipt of your order.

-A SPECIAL MESSAGE TO ESTES CUSTOMERS-

From time to time Estes Industries makes the names and addresses of its customers available to other companies who produce other products you may be interested in. This means that you may be receiving advertising and sales literature from these companies in your mail. If you do not wish your name and address to be used in this manner, please contact Estes Industries Customer Service Department, Penrose, Colorado 81240.

## ATTENTION CALIFORNIA RESIDENTS

**To receive model rocket engines by mail order in California, you must be aware of the following conditions and fulfill several simple requirements.**

1.) To receive 1/4A through C type engines you must be at least 14 years of age and have a "Statement of Age Certificate" on file with Estes Industries.
2.) To receive D engines you must be at least 18 years of age and have a "Statement of Age Certificate" on file with Estes Industries.
3.) If you are not old enough to receive the type of model rocket engines you wish, please have one of your parents send your order in for you. Remember they must also have a "Statement of Age Certificate" on file with Estes Industries.
4.) You need to file a "Statement of Age Certificate" only once. Fill out and send in the certificate below now to assure the rapid handling of all your future orders.
5.) To launch, an individual must secure authorization (either written or verbal) from the fire authority having jurisdiction over the area he plans to use as a launch site.
6.) No additional consumer permit to purchase or use model rocket engines is required.

Copies of the State of California Model Rocket Regulations may be obtained upon request by writing either of the following:

**Estes Industries**
**Customer Service Department**
**Penrose, Colorado 81240**

or

**Chief Albert E. Hole**
**California State Fire Marshal**
**1215 "O" Street, Room A101**
**Sacramento, California 95814**

## CALIFORNIA STATEMENT OF AGE CERTIFICATE

**Name** _____ **Date** _____

**Address** _____ **City** _____

**State** _____ **Zip** _____ **Phone (____)** _____

**In order to receive model rocket engines in California, please check one of the following boxes and sign.**

☐ **(A) I am 14 years of age, but not yet 18.**

☐ **(B) I am 18 years of age or older.** **Rocketeer Signature** _____

**Parent Signature** _____

**NOTE: Certificate need be filed only once.** **(Must be signed if box "A" is checked)**

**Send to:** **Estes Industries**
**Order Processing Dept.**
**Penrose, Colorado 81240**
**or include with your next order.**



## ATTENTION OREGON RESIDENTS

Model rockets can be flown in Oregon, however, there are restrictions imposed by the State Fireworks code and enforced by the Oregon State Fire Marshal. Estes Industries can sell engines only to holders of valid permits. Permits to purchase and launch model rocket engines can be obtained by any responsible adult by requesting an application from the Oregon State Fire Marshal, Chief Deputy, 668 Church Street, N.E., Salem, Oregon 97301.

As soon as you receive your permit, please send us a copy to keep on permanent file. All orders for engines must be placed in the name of a permit holder.

If you are not yet an adult yourself, your parents, teachers, etc. can obtain permits and can purchase engines for you.

## ATTENTION WASHINGTON RESIDENTS

On September 10, 1979, new Washington State Model Rocketry Regulations went into effect. Under the new Washington Administrative Code 212.20 there is NO age or licensing requirement to purchase or use model rocket engines. Please check with your local authorities for approved launch sites. For a copy of the new regulations write: Estes Industries Customer Service Dept., Penrose, Colorado 81240 or State of Washington, Office of the State Fire Marshal, Insurance Building, Olympia, Washington 98504.

## ATTENTION MASSACHUSETTS AND RHODE ISLAND RESIDENTS

According to your state model rocketry regulations, you are required to obtain a permit from your local fire or safety authority in order to purchase and use model rocket engines.

As soon as you receive your permit, please send us a copy to keep on permanent file. All orders for engines must be placed in the name of the permit holder. For a copy of Massachusetts regulations write for: FPR Fire Prevention Regulation #15, State Book Store, State House, Room 116, Boston, Massachusetts 02133. (Include 30¢ for copy and postage.) In Rhode Island, write: Rhode Island State Fire Marshal, 12 Humbert Street, North Providence, Rhode Island 02911 c/o William McVey, Chief of Technical Services.

## ATTENTION NEW JERSEY RESIDENTS

In accordance with Safety Regulation No. 24 of the New Jersey Department of Labor and Industry, Estes Industries can sell engines only to holders of valid permits. These permits are issued to any adult who will assume full responsibility for the safe handling and use of model rocket engines, including the purchase of them.

To obtain a permit first write to the State of New Jersey, Department of Labor and Industry, Bureau of Engineering and Safety, Box 709, Trenton, New Jersey, 08625, and request an application form for a model rocket engine permit. The fee for a permit is two dollars. DO NOT SEND THE PAYMENT until you return the completed application form to the Department of Labor and Industry. You will receive more complete information on the procedures to follow when you receive the application form.

As soon as you receive your permit, please send us a copy to keep on permanent file.

If you are not yet an adult yourself, your parents, teachers, etc. can obtain permits and can purchase engines for you.

## ATTENTION CANADIAN RESIDENTS

Please send all orders for Estes products to: Hobby Industries, 24 Ronson Drive, Rexdale, Ontario, M9W 1B4. As prices are different in Canada you should request a Canadian Price List and Catalog from Hobby Industries

## ATTENTION FOREIGN ORDERS

Due to restrictive International Air Mail Regulations, we are not able to ship our model rocket engines to any international or APO address.

## ATTENTION ROCKETEERS !

Please remember that modelers such as yourself must obey the laws and regulations of your city, county, and state if model rocketry is to advance and current restrictions are to eventually be lifted. Only thru maintaining an excellent safety record can this take place. We feel we have the safest, most complete educational model rocketry program available, however, occasionally antiquated fireworks laws and misinformed individuals interpret model rocketry as requiring strict regulations, which it does not need or deserve.

We at Estes Industries promise to continue our efforts to inform the misinformed and to separate model rocketry from the misconception that it should be treated like fireworks, which it is not. Your compliance with existing laws will assist us in pushing model rocketry ahead for less restriction in the future. Also, remember that experimenting with home-made propellants is far too dangerous to attempt. Stay within the law – stay alive.

Sincerely,
ESTES INDUSTRIES

*Vern Estes*

Vern Estes, President

## FREE GOODIES FOR YOU!

### FREE PLANS

All orders received on even numbered months, (February, April, June, etc.) will be returned with a "Free" model rocket plan to help increase your Estes fleet. These "free plans" feature a variety of designs from single-stage sport models to far-out exotic rockets you will be proud to display. All "free plans" can be constructed from the Estes hi-performance parts and accessories listed in our catalog.

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Remember . . . these items are available only with return mail-orders!!!!

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To receive a copy of our 1980 Model Rocket News - Winter Edition, just send us an order using the enclosed order form and we'll include a copy of our latest Model Rocket News with your return order. (Or send a self-addressed stamped envelope, at least 4" x 9", to Estes Industries Customer Service Department, Attention: MRN Editor, Penrose, Colorado 81240, and we'll forward a copy to you.)

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## SUPPORT YOUR 1980 United States Model Rocketry Team

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